COLONY OF MAURITIUS

ANNUAL REPORT

ON THE MEDICAL AND HEALTH DEPARTMENT

1st JANUARY to 31st DECEMBER, 1933

Printed by R. W. Brooks, Government Printer, Port Louis, 1935.

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HOSPITALS & DISPENSARIES are shown in the Map by Numbers as indicated below.

PORT LOUIS	**FLACQ**	**PLAINES WILHEMS**
Civil Hospital ... 1	Flacq Hospital ... 11	Curepipe ... 26
Eastern Suburb (St François) ... 2	Trou d'Eau Douce ... 12	Vacoas ... 27
Western Suburb (Bell Village) ... 3	Rivière Sèche ... 13	Victoria Hospital (Quatre Bornes) ... 28
PAMPLEMOUSSES	Sébastopol ... 14	**GRAND PORT**
Terre Rouge ... 4	St. Julien ... 15	Rose Belle ... 29
Pamplemousses (Village) ... 5	Brisée Verdière ... 16	Plaine Magnien ... 30
Long Mountain ... 6	**MOKA**	Mahébourg Hospital ... 31
RIVIERE DU REMPART	Moka Hospital ... 17	L'Escalier ... 32
Poudre d'Or ... 7	Pailles ... 18	Bois des Amourettes ... 33
Ravin ... 8	St. Pierre ... 19	St. Hubert ... 34
Grand Gaube ... 9	Quartier Militaire ... 20	**SAVANNE**
Grand Bay ... 10	**BLACK RIVER**	Souillac Hospital ... 35
	Petite Rivière ... 21	Riviere des Anguilles ... 36
	Bambous ... 22	Chemin Grenier ... 37
	Tamarin ... 23	Baie du Cap ... 38
	Grande Riviere Noire ... 24	
	Case Noyale ... 25	

Index to Medical Annual Report, 1933

SUPPLEMENT

COLONY OF MAURITIUS

ANNUAL REPORT

on the Medical and Health Department,

1st January to 31st December, 1933.

I.—Administration.

So far as administration is concerned progress has been suspended during the year on account of important discussions which took place in London between the delegation and the Secretary of State for the Colonies. Another event which prevented progress from being effected was the appointment of a Committee to advise (i) as to the net rates of remuneration which, under existing conditions, should be applied to the various posts of the service ; (ii) as to the manner in which the pensionable emoluments of posts should be adjusted to any new rates of remuneration which it may be advised to adopt. The report of the committee had not been submitted by the end of the year. Dr. A.C. d'Arifat, acting Director of the Department during the writer's absence on leave, was appointed a member of this committee.

It is clear that until every post in the Department has its basic salary laid down, there is little chance of administrative progress. It is sincerely hoped that an early decision will be taken on the salaries to be assigned to certain posts and thus bring to an end a period of uncertainty which has already lasted far too long. It is not in the public interest that one of the most important departments of the Government of the Colony should be in a state of continual disorganisation, which must affect unfavourably the work of the staff, and be a definite deterrent to the recruitment of suitable candidates to many of the subordinate posts.

2. The professional staff of the Department on the 31st December, 1933, was as follows:

Director : J. Balfour Kirk, M.B., Ch.B., M.R.C.P., D.P.H., D.T.M. & H.
Deputy Director of Medical Services : L. A. C. d'Arifat, L.R.C.P., M.R.C.S.
Medical Officer of Health, Port Louis and Port Health Officer : L. M. J. Raymond Pilot, M.B., B.S., M.R.C.S., L.R.C.P., D.T.M. & H.
Pathologist : A. R. D. Adams, M.D.
Superintendent, Civil Hospital : Y. Cantin, M.R.C.S., L.R.C.P., D.T.M.
1st Resident Surgeon, Civil Hospital : R. Pierre, M.B., B.S., L.R.C.P., M.R.C.S., D.T.M. & H., D.P.H.
2nd Resident Surgeon, Civil Hospital : H. Joomaye, M.R.C.S., L.R.C.P., D.T.M. & H. (acting).
Superintendent, Victoria Hospital : L. R. du Verge, *M.C.*, M.R.C.S., L.R.C.P.
1st Resident Surgeon, Victoria Hospital : L. V. Pierre Goupille, M.D., (Paris).
2nd Resident Surgeon, Victoria Hospital : Ralph Mayer, L.R.C.P., M.R.C.S.
Superintendent, Mental Hospital : J. D. Dyson, M.B., B.S., D.P.M., M.R.C.S., L.R.C.P.
Assistant Superintendent, Mental Hospital : J. F. E. Brunel, M.D., (Montpellier)—(temporary and provisional).
Police and Prison Surgeon, Port Louis : L. N. R. Comty, M.B., B.S., M.R.C.S.

Government Medical Officer, Plaines Wilhems and Black River : J. J. MAINGARD, *M.B.E.*, L.M.S., S.A., (London) Medecin Colonial (Paris).
Superintendent, Leper Hospital : J. H. ANDRE, M.R.C.S., L.R.C.P.
Medical Officer in charge Hookworm and Malaria Department : L. J. Mc GREGOR, M.B., B.S., M.R.C.S., L.R.C.P., D.T.M. & H. (temporary and provisional).
Radiologist : W. R. DUPRE, L.R.C.P. & S., L.F.D. & S., D.M.R.E.
Government Analyst : PIERRE DE SORNAY (acting).
Sanitary Engineer : vacant.

DISTRICT MEDICAL OFFICERS

(*Government Medical Officers having charge of a district hospital and of all the dispensaries in their district, and also of the Sanitation of the district*).
Pamplemousses : J. H. ANDRE, M.R.C.S., L.R.C.P.
Rivière du Rempart : S. PIARROUX, L.R.C.P. & S., L.F.D. & S.
Flacq : R. LAVENTURE, M.D. (Montpellier, France)—(on leave ; replaced by Dr. Bouloux).
Grand Port : R. LAVOIPIERRE, M.D. (Paris), D.T.M. (Paris), L.R.C.P., L.R.C.S., L.R.F.P. & S., D.P.H.
Savanne : J. CANTIN, M.D. (Paris).
Moka : R. PILOT, *M.B.E.*, M.D. (Lyons).

LEAVE, MUTATIONS, ETC.

2. Dr. J. B. Kirk resumed duty from European leave on the 28th October, 1933, and Dr. L. A. C. d'Arifat resumed duty as Deputy Director. The appointment of Dr. L. J. McGregor as Medical Officer in charge of Hookworm and Malaria Department was continued.

Dr. R. Laventure, Government Medical Officer, Flacq, went on leave on the 8th April, 1933, and was replaced by Dr. F. Bouloux. In view of this arrangement, Dr. H. Joomaye and Dr. I. D. Atchia were temporarily and provisionally employed at the Civil Hospital as Resident Surgeons.

Dr. L. N. R. Comty returned from leave on the 25th November, 1933. On resumption he was appointed as Police and Prison Surgeon, Port Louis, and Dr. R. Pierre was reverted to the Civil Hospital as Resident Surgeon.

Miss I. Rogers, Matron, Mental Hospital and Mrs. H. Brunning, Matron, Moka Hospital, went on leave on the 25th December, 1933.

Miss C. C. Denly arrived on the 14th June, 1933, and assumed duty as Nursing Sister.

DEATH

3. Dr. F. J. R. Komplé entered the service of this Government in September, 1898 and held many posts in the Department until the time of his decease.

He acted as Director through the war period and during the influenza epidemic of 1919, successfully holding the department together in a time of considerable difficulty and strain. Dr. Komplé had taken a well earned pension in December, 1931, but kindly undertook service as Government Analyst when delay occurred in the appointment of a titular to this post. He died in harness after a short illness. His last conscious act shewed that he had the welfare of the department in mind even at the last ; and his fellow officers mourned the loss of a gentle, sympathetic and agreeable colleague.

LEGAL

4. Ordinance 17 providing for the fumigation, disinfection and landing of certain grain and storing thereof in a Granary, was enacted during the year.

The Granary Regulations were published under Government Notification No. 21 and the rates for the Night Soil Service for Port Louis and Curepipe were published under Government Notification No. 5.

The closing of a private slaughter house at Rivière des Anguilles was proclaimed.

FINANCIAL

5. The revenue of the Colony for the financial year 1932-33 was ... ... Rs. 14,503,504

The expenditure on Medical and Sanitary Services out of the Revenue was ... ... Rs. 1,298,163

II—Public Health.

6. The year has been a good one climatically. There was an excellent crop and these favourable circumstances have been reflected in a further improvement in the vital statistics. Towards the end of the year the Colony experienced the beginning of a long spell of dry weather which had the effect of reducing the number of cases of malaria which usually make their appearance during the last quarter of the year when rains are frequent.

The death rate of the Colony was 27.3 per 1,000 as compared with 32.8 for the previous year. The birth rate rose from 26.2 per 1,000 to 34.7.

7. 135 patients suffering from malignant disease were admitted to the hospitals, as compared with 159 during 1932. 73 of the tumours were situated in the female genital organs and breast ; the stomach and liver accounted for 16 ; peritoneum and intestinal tract 15 ; buccal cavity 9 ; and the skin 6. In 16 cases the site was not specified. The non-malignant new growths numbered 82.

The total number of deaths from Cancer and other tumours in the Colony is given by the Registrar General as 92.

COMMUNICABLE DISESAES

(A).—INSECT-BORNE DISEASES—MALARIA.

8. The total number of patients suffering from malaria admitted to the hospitals was 3,045, a decrease of 516 over the figure for the previous year. The case mortality was 3.74%.

The following tabular statement shows the admissions for malaria and deaths ascribed to it during this and the preceding year.

Institutions.	MALARIA.			
	Admissions.		Deaths.	
	1932	1933	1932	1933
Civil Hospital	1,156	1,020	42	40
Port Louis Prison Hospital ...	103	119	—	—
Long Mountain Hospital ...	377	346	15	26
Poudre d'Or Hospital	231	194	5	7
Flacq Hospital	252	219	16	9
Mahebourg Hospital	231	171	8	11
Souillac Hospital	342	221	9	1
Victoria Hospital	510	492	11	14
Beau Bassin Prison Hospital ...	141	73	—	—
Moka Hospital	136	146	6	6
Mental Hospital Infirmary ...	68	37	2	—
Barkly Industrial School Hospital	14	7	—	—
	3,561	3,045	114	114

The total number of deaths in the Colony from malaria and malarial cachexia, 2,464, is equivalent to a death rate of 6.34‰ living. The rate for 1932 was7.7‰.

9. Owing to the disorganisation attendant upon the transition from the old type of organisation to the new, it has not been possible to include in this year's report the splenic indices of school children in the various districts of the Colony. This feature of the report will be resumed as soon as the Department is restored to its full strength.

PLAGUE.

10. No case of plague occurred during the year.

The plague-preventive work carried out is recorded in the report of the Medical Officer of Health, Port Louis. (Appendix IV).

TYPHUS FEVER.

11. No case of this disease was notified during the year.

(B).—INFECTIOUS DISEASES

SMALL POX.

12. There has been no small-pox in the colony since 1913. 8,688 children were vaccinated during 1933 by the Public Vaccinators. The data are given hereunder:

Successful vaccinations on 1st attendance	7,509	
Successful vaccinations on 2nd and subsequent attendances...	848	
		——8,357
Unsuccessful vaccinations		322
Vaccinations in which the results could not be ascertained		9
Total		8,688

The proportion of children vaccinated by Government Vaccinators to live births is 64.4%.

ENTERIC FEVER.

The number of cases of Enteric fever notified every month from the districts in the Colony is shewn in the following table.

ENTERIC FEVER FOR THE YEAR 1933.

Districts.	January	February	March	April	May	June	July	August	September	October	November	December	Total for the year.
Port Louis	1	—	1	1	—	1	2	—	—	—	1	2	9
Plaines Wihems ...	10	16	9	3	3	2	6	6	8	5	6	7	81
Moka	1	—	—	—	—	3	2	1	1	1	1	2	12
Pamplemousses ...	—	—	—	—	—	—	—	—	—	—	—	—	---
Rivière du Rempart ...	—	—	—	—	—	—	—	—	—	—	—	—	---
Flacq	—	—	1	1	2	—	2	—	1	1	—	2	10
Savanne	7	1	2	6	3	2	3	4	2	4	1	3	38
Grand Port	1	5	4	—	2	5	4	2	4	2	1	1	31
Black River	—	—	—	—	—	—	—	—	—	—	—	—	---
Total cases ...	20	22	17	11	10	13	19	13	16	13	10	17	181

These figures should be regarded with considerable reserve, as they probably understate the numbers. It is extremely unlikely that the districts of Pamplemousses, Rivière du Rempart and Black River escaped this infection.

Leaving apart the accuracy of the returns, the situation in Port Louis shows a notable improvement on past years. The number of cases of enteric fever notified in Port Louis in 1930 was 201 ; in 1931 it was 19 ; in 1932 14 ; and in the current year 9. There is no doubt that the great reduction demonstrated by these figures is due to the chlorination of the water supply distributed to the greater part of the town.

It is difficult to account for the prevalence of this disease in Plaines Wilhems, for in this district the majority of the people enjoy a supply of pure water distributed by means of pipes. Plaines Wilhems is the healthiest district of the colony so far as climate is concerned, and the general character of the inhabitants leads one to view with surprise its unenviable precedence in the table. But it is probable that the number of notifications from Plaines Wilhems and Port Louis are much more nearly accurate than those from the other districts. In Plaines Wilhems there are many resident medical practitioners and few cases of notifiable disease can escape detection if they are seen by a doctor. In the other districts practitioners are seldom called in often enough for a diagnosis to be made: if the patient recovers the case is unrecorded ; if he dies he is probably recorded as having died of malaria or tuberculosis. In fact, with the exception of Port Louis, the numbers of notifications of this disease from the various districts vary pretty much according to the numbers of resident medical practitioners.

DIPHTHERIA.

13. Fifty-two cases of Diphtheria were notified in 1933.

PUERPERAL STATE.

14. One hundred and forty-six deaths were registered as being due to the puerperal state.

The deaths are classified as under:

Puerperal albuminuria and convulsions	15
Puerperal Haemorrhage	4
Puerperal Sepsis	18
Abortion	—
Other accidents of pregnancy	3
Other toxaemias of pregnancy	8
Other accidents of childbirth	98

32 cases of puerperal septicaemia, of which 8 proved fatal, were treated in hospitals—a case mortality of 25%.

The maternal mortality rate (the ratio of the number of deaths ascribed to the puerperal state to the total number of births including still-births) was 9.9‰ in 1933 as compared with a rate of 9.6‰ for the previous year.

ERYSIPELAS.

15. 77 cases were notified, compared with 52 in 1932. 16 deaths were registered.

TUBERCULOSIS.

16. Out of the 10,615 deaths of 1933, 431 were due to tuberculosis giving a death rate of 11.09 per 10,000 inhabitants.

LEPROSY.

17. The report on the work of the Leprosy Board and of the Leper Hospital appears in Appendix VI.

CHICKEN POX.

18. Two cases of this disease were treated at the Hospitals: 1 at Moka and 1 at Port Louis Prison.

VENEREAL DISEASES.

19. Four hundred and eighty-six cases of syphilis, with 22 deaths were admitted to the hospitals during the year. 281 cases of gonorrhoea were treated, and 63 cases of soft chancre.

Mauritius is a signatory to the International Agreement signed at Brussels in 1924 respecting facilities to be given to merchant seamen for the treatment of venereal disease.

This agreement provides for the free treatment of seamen suffering from venereal disease. The treatment is open to all merchant seamen or watermen without distinction of nationality.

Treatment cards drawn up in the form of the model indicated in the agreement are issued to seamen coming for treatment for the first time. On the card is recorded a short clinical account of the case ; the diagnosis ; the treatment carried out at the centre ; indications for treatment on the voyage and the results of the serological examination undertaken in cases of syphilis.

The only difference between local practice and the requirements of the agreement is that the Kahn test is now used instead of the Wasserman reaction in the serological diagnosis of syphilis.

The treatment centre is situated at the Civil hospital Port Louis within easy reach of the harbour. It is open daily, Sunday excepted, from 8 a.m. to 5 p.m.

Hospital cases are accommodated in the hospital.

(C).—HELMINTHIC DISEASES

ANKYLOSTOMIASIS.

20. References to this condition are to be found in Appendix II.

The number of cases of this condition treated at the hospitals and dispensaries was 20, 030 and the number of deaths in hospitals due to hookworm disease was 120.

SCHISTOSOMIASIS.

21. 58 cases of this condition were treated in the hospitals during the year, and 201 at the dispensaries.

VITAL STATISTICS.

22. The Vital Statistics of the Colony are calculated on the basis of the number of the population on the 1st January of the year under reference.

The distribution of the population and its density are shown hereunder.

ESTIMATED POPULATION OF MAURITIUS ON THE 1ST JANUARY, 1933.

Districts	Area in square miles	Total population	Density per square mile
Port Louis	16	54,143	3383.9
Pamplemousses	69	35,585	515.7
Rivière du Rempart ...	57½	30,358	527.9
Flacq	115	51,330	446.3
Grand Port	101	47,397	469.2
Savanne	93½	30,170	322.6
Plaines Wilhems	78	96,653	1239.1
Moka	89	29,152	327.5
Black River	101	13,612	134.7
Grand Total	720	388,400	539.4 (mean)

The chief feature of interest here is the high density of population: 539.4 per square mile.

MARRIAGES.

23. 1,521 marriages were celebrated in 1933 as compared with 1,271 in 1932 ; showing an increase of 250. This is equivalent to a marriage rate (number of persons married to every thousand of population) of 7.9‰ against 6.6 in 1932.

BIRTHS.

24. The total number of births for the year was 13,479 (6,836 males and 6,643 females) 4,570 of these occurred in the General, and 8,909 in the Indian population. The birth rate was 34.7‰ against 26.2‰ in 1932.

The District birth rate (on population as at 1st January of each year) and the five-year mean rate are as follows:

District	1929	1930	1931	1932	1933	mean
Port Louis	35.6	35.5	33.1	29.2	37.3	34.14
Pamplemousses ...	31.2	26.0	23.2	18.7	28.5	25.52
Rivière du Rempart ...	35.7	32.1	29.9	25.8	44.1	33.52
Flacq	29.6	27.2	26.6	20.9	29.4	26.54
Grand Port ...	32.4	30.0	27.6	24.9	33.8	29.74
Savanne	31.3	25.7	28.2	22.6	31.6	27.88
Plaines Wilhems ...	39.1	37.7	35.6	32.2	38.0	36.52
Moka	33.7	30.3	31.6	29.0	34.2	31.76
Black River	30.3	31.2	26.2	20.5	26.5	26.94
Whole Colony ...	34.0	31.5	30.2	26.2	34.7	31.32

It will be observed that the birth-rate was higher than that of last year.

DEATHS.

25. During the year 1933 the total number of deaths was 10,615 (5,529 males and 5,086 females) ; 3,102 in the General and 7,513 in the Indian population. This number is a decrease of 2,233 over the total deaths of 1932.

The death-rate for the Colony was 27.3 compared with 32.8‰ for 1932 and with 33.2‰ for the quinquenial period preceding 1933. The month of maximum mortality was March whilst in 1932 it was February.

The following table shows the district death-rates yearly for the five yearly periods 1929-1933 and the average rates for the same period:

District	1929	1930	1931	1932	1933	mean
Port Louis ...	35.0	43.3	38.6	33.6	28.1	35.72
Pamplemousses ...	37.8	48.3	46.6	37.1	30.3	40.20
Rivière du Rempart	28.1	37.9	45.6	29.6	24.2	31.08
Flacq ...	33.4	37.2	46.7	32.7	29.0	35.80
Grand Port ...	31.7	37.7	44.2	37.3	30.8	36.34
Savanne ...	30.6	27.8	44.7	39.3	31.5	34.78
Plaines Wilhems ...	22.2	25.6	25.8	24.7	21.6	25.58
Moka ...	28.9	30.9	34.7	32.7	28.6	31.16
Black River ...	44.0	39.5	47.2	51.0	33.5	43.04
Whole Colony	30.63	35.4	39.1	32.8	27.3	33.04

The death-rate for Plaines Wilhems is the lowest death-rate of all the districts of the Colony.

The next table, with the figures of 1932, inserted for purpose of easy comparison, exhibits the causes of deaths and rates classified according to the " Manual of International List of Causes of Death " adopted by the Registrar General of England. (Based on the 4th Decennial Commission, Paris, 1929).

Group	No. of deaths 1932	No. of deaths 1933	Rate per ‰ 1932	Rate per ‰ 1933
1. Infectious and parasitic Diseases ...	5,485	4,103	14.0	10.6
2. Cancer and other tumours	89	92	.2	.2
3. Rheumatism, diseases of nutrition, etc.	121	117	.3	.3
4. Diseases of the blood and blood-forming organs	101	116	.3	.3
5. Chronic poisoning	2	2	.0	.0
6. Diseases of the nervous system and sense organs	476	462	1.2	1.2
7. Diseases of circulatory system ...	340	253	.9	.6
8. Diseases of the respiratory system ...	2,055	1,815	5.2	4.7
9. Diseases of the digestive system ...	1,293	1,040	3.3	2.7
10. Non-Venereal diseases of genito-urinary system and annexa ...	856	684	2.2	1.8
11. Diseases of pregnancy and child-birth	108	146	.3	.4
12. Diseases of the skin and cellular tissue	46	48	.1	.1
13. Diseases of bones and organs of locomotion	10	4	.0	.0
14. Congenital malformations ...	1	5	.0	.0
15. Diseases of infancy	764	815	1.9	2.1
16. Senility	296	160	.7	.4
17. Deaths from violence	120	125	.3	.3
18. Ill-defined causes	685	628	1.8	1.6
	12,848	10,615	32.8	27.3

The more notable causes of death were as under:

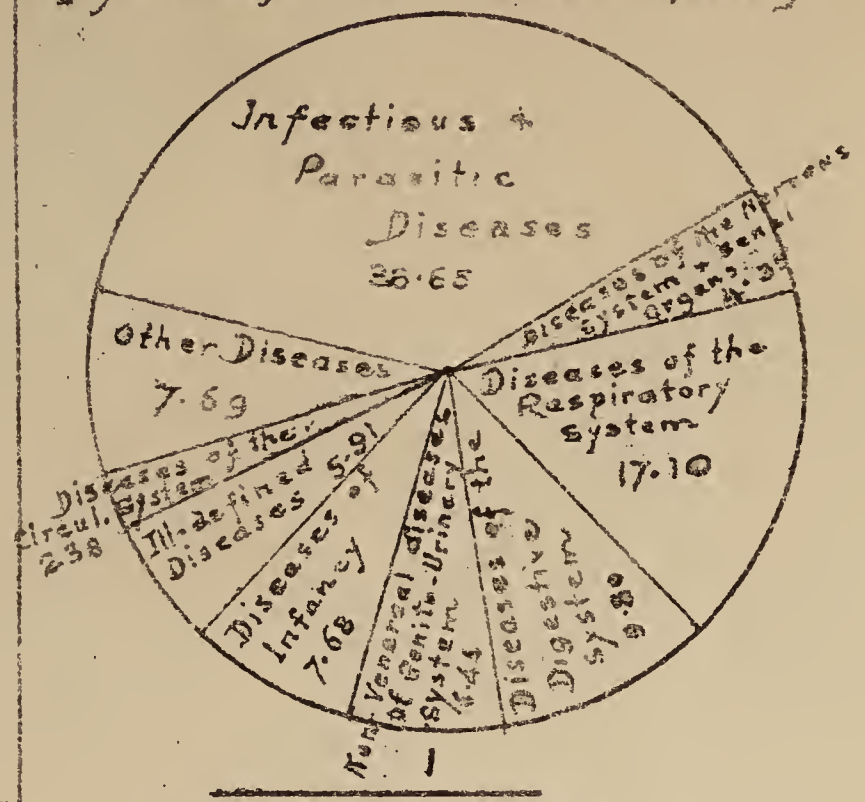
Diseases	1932 No. of deaths	1933 No. of deaths	1932 Rate per ‰	1833 Rate per ‰
Malaria and Malarial cachexia ...	3,032	2,464	7.75	6.34
Pneumonia and broncho—and lobar pneumonia	1,429	1,293	3.91	3.32
Influenza	725	256	1.85	.65
Diseases of early infancy	764	815	1.95	2.09
Phthisis and tuberculosis	421	431	1.07	1.10
Diarrhoea and Enteritis	1,097	844	2.80	2.17
Bronchitis	462	382	1.15	.98
Old-age, debility	699	493	1.78	1.26
Dysentery	791	499	2.02	1.28
Albuminuria, nephritis and uraemia ...	805	655	2.05	1.68
Heart diseases (organic)	239	174	.61	.44
The puerperal state	108	146	.27	.36

INFANTILE MORTALITY.

26. The infantile mortality rate is the number of deaths of infants under one year of age occurring in any year for every thousand live births registered during the same year.

The rate for 1933 was 131.5‰ as compared with 158.97‰ for 1932,

PERCENTAGE CLASSIFICATION OF TOTAL DEATHS (10,815)
[from Registrar General's Report]



OTHER DISEASES

Cancer & other Tumours	.87
Rheumatism, diseases of nutrition, etc.	1.70
Diseases of the blood	1.09
Diseases of Pregnancy & Child-birth ...	1.37
Diseases of the skin & cellular tissue	.46
Senility	1.51
Deaths from violence	1.18
Diseases of bones & organs of locomotion, chronic poisoning and Congenital Malformations.	.11
TOTAL	7.69

PERCENTAGE CLASSIFICATION OF DEATHS DUE TO INFECTIOUS & PARASITIC DISEASES. [Total. 4,103]

OTHER DISEASES

Typhoid Fever	1.19
Measles, whooping Cough, Diphtheria, Erysipelas, Cerebro-spinal Fever, Tetanus, Leprosy, Syphilis, other Venereal Diseases, Septicaemia, Pyaemia, other diseases due to Helminths, and other Infectious and parasitic diseases	4.69
TOTAL ...	5.88

PERCENTAGE CLASSIFICATION OF DISEASES IN OUT-PATIENTS TREATED at Public Dispensaries

OTHER CAUSES

Affections of the Circulatory System	1.18
Affects. produced by external Causes 2.05 Puerperal State, diseases of the bones, malformations, diseases of Infancy, Affects. of old Age, and Ill-defined Diseases	1.29
TOTAL	4.41

The deaths under 5 years were distributed as follows :

	Males	Females	Total
Under 1 year	938	835	1,773
1 year and under 2 years	168	174	342
2 years and under 3 years	148	161	309
3 years and under 4 years	99	97	196
4 years and under 5 years	64	85	149
	1,417	1,352	2,769

The following table shows the grouping of these deaths according to the causes inscribed on the death certificates:

Causes of death	Under 1 year	1 to under 5 years
Infectious and Parasitic diseases	378	485
Cancer and other tumours	1	5
Rheumatism, Diseases of Nutrition etc.	14	15
Diseases of the blood-forming organs	1	3
Nervous system and organs of special senses ...	56	74
Diseases of Circulatory system	5	3
Diseases of Respiratory system	261	153
Diseases of Digestive system	197	161
Diseases (Non-venereal) of the genito-urinary System and Annexa	3	20
Diseases of the Skin and cellular tissue	4	2
Diseases of Bones and organs of locomotion ...	1	—
Malformations	5	—
Diseases of early infancy	815	—
Affections produced by external causes	4	15
Ill-defined causes	28	60
All causes ...	1,773	996

The distribution of the deaths attributed to the diseases of early infancy and a comparison of these figures with those of 1932 is shown below:

Designation of Diseases and accidents	1932	1933
Infantile debility	695	733
Premature Birth	62	59
Atelectasis	3	8
Injuries at Birth	2	6
Diseases of umbilicus, etc.	1	3
Pemphigus neonatorum	—	1
Melaena neonatorum	1	—
Icterus neonatorum	—	5
Total ...	764	815

STILL-BIRTHS.

27. A still-birth is defined by the Registrar General as "a child born dead at or after the seventh month of pregnancy."

The number of still-births registered during 1932 and 1933 is as under:

Districts	Males		Females		Total	
	1932	1933	1932	1933	1932	1933
Port Louis ...	72	100	65	90	137	190
Pamplemousses ...	34	50	30	52	64	102
Rivière du Rempart ...	46	53	46	43	92	96
Flacq	85	117	66	79	151	196
Grand Port ...	71	66	55	69	126	135
Savanne	41	47	31	45	72	92
Plaines Wilhems ...	129	132	107	149	236	281
Moka	49	76	40	56	89	132
Black River ...	22	10	6	11	28	21
Total ...	549	651	446	594	995	1,245

It is equivlent to 92.3‰ of live births, for the same period as compared with 96.9‰ for 1932.

The still-births are distributed as follows for the two great classes of the population:

	Males	Females	Total
General population	149	118	267
Indian population	502	476	978
Total ...	651	594	1,245

III.—Hygiene and Sanitation.

INSECT-BORNE DISEASES

MALARIA.

28. In conformity with the policy indicated in last year's Annual Report, active anti-malarial work has been confined to the MacGregor zone which will be found defined in the Report of the Special Malaria Service printed as Appendix III of this Report.

In the rural coastal areas 1,484,772 feet of existing drains and water-courses have been upkept. Totaquina in tablet form has been made available and 258,450 tablets of this remedy were sold during the year.

The report of the Medical Officer of Health, Port Louis, gives the details of the anti-malarial work carried out by the staff under his control. Its palliative character is apparent.

In the McGregor zone the chief development has been the survey of the Curepipe area, of which the details are given in Appendix III. This appendix deserves careful study by those who have hitherto regarded Curepipe as being malaria free for all practical purposes. It will be seen from it that the two dangerous anophelines: *A. costalis* and *A. funestus* have been found breeding there, as well as the suspect *A. maculipalpis*. It need cause no surprise, in view of these findings, to learn that 32 out of 163 persons diagnosed microscopically as infected with malaria had most probably contracted the infection in Curepipe itself. Though Dr. McGregor is led to believe that Curepipe was free of malaria for eight months of the year, this is scarcely a matter for congratulation since it would appear that nine out of thirteen of the breeding places are artificial ones which have not yet received attention. Another fact which is inclined to temper one's optimism is that 1933 saw the beginning of one of the longest droughts in living memory, and there is no doubt that if the usual rains had been in evidence the account given by Dr. McGregor might well have been different.

The number of artificial nuisances within the zone is a remarkable index of the indifference of the population to the problem. Many of those receptacles could be sacrificed without any great inconvenience to the persons concerned and with considerable benefit to the public health. Where there is a piped water suply, as there is in the district of Plaines Wilhems, garden tanks and cisterns are quite unnecessary and steps will be taken to reduce the numbers of, if not entirely to suppress, this kind of nuisance.

PLAGUE.

29. In the Annual Report for 1932 an appreciation of the plague problem in the Colony was given and it was shown that as an essential plague preventive measure it was necessary to make radical modifications in the existing methods of storing grain in Port Louis. The basic sanitary requirement was the separation of the grain from rats, and this was to be effected by providing a rat-proof granary for the storage of grain, the intention being that the wholesale trade in grain should be conducted from the granary, leaving only in the town itself retail shops. After the wholesale trade had moved into the granary the retailers would be required to keep under rat-proof condition of storage quantities not exceeding thirty bags.

The bill to enable these measures to be taken was laid before the Council of Government at the meeting held on the 23rd February, 1932. It was referred to a Select Committee of members with the Medical Director in the chair. The committee dealt expeditiously with the bill which was referred to the Council with slight, but important amendment and on 7th April, 1933 it became law, appearing as Ordinance 17 of 1933 " To provide for the fumigation, disinfection and landing of certain grain and the storing thereof in a Granary."

The sanitary provisions of this law are indicated in the title. The law enacts that grain of the kind specified in the Ordinance may be fumigated before landing and that, whether fumigated or not, it shall be landed direct into the granary ; though provision is made to enable it to be landed elsewhere in emergency. Article 6 of the Ordinance states that, subject to certain specified exceptions, " it shall not be lawful on or after the 1st July, 1933.....to store, keep or possess grain on any premises other than the granary in any quantities exceeding at a time thirty bags if the premises are within the limits of the town and district of Port Louis, or seventy bags if the premises are outside these limits." Stores on sugar estates were exempted from these provisions. The Ordinance further provides the machinery for the assessment of compensation to owners of stores who can prove that they suffer loss of income from the total or partial disuse of their stores resulting from the operation of this Ordinance.

30. The granary is a two-storied building fronting a lighterage wharf in the harbour. At intervals along the water front of the building there are seven electrical conveyors which can be hung over the dockside and lowered into their loading position on the lighter. The fumigated grain is loaded on the conveyors which lift the bags to the top floor of the granary which is in fact another quay. Here the grain is sorted, distributed among its owners and conveyed by spiral shoots into the stores which occupy the ground and first floors, whence it is issued on the landside of the building as required.

When the full implications of the Ordinance became realised the wholesale traders pointed out the extreme difficulty, if not impossibility, of so arranging their practice as to enable them to work entirely from the granary. They submitted to the Government, through the Chamber of Commerce, certain representations which received careful consideration, action in the meantime regarding the reduction of stocks in the town to the limits prescribed by the Ordinance being suspended. Eventually it was decided in

practice to allow wholesale merchants to store in Port Louis a quantity of bags not exceeding 1,500 on the strict condition that sufficient rat-proof storage to accommodate the number of bags so kept was provided within the store itself and maintained in rat-proof condition to the satisfaction of the Sanitary Authorities.

It now remains to be seen to what extent merchants will avail themselves of this concession.

31. Surveillance of rats is maintained as a permanent feature of the port sanitary administration. Arrangements are in force whereby the dock area is being continually trapped, while, in the part of the town surrounding the docks the rodent trapping staff is established at such a number as will enable each premises to be visited and trapped every 14 days throughout the year. Rodents trapped or found dead are examined microscopically for plague. In 1933, 10,540 rodents were trapped: of these 5,755 were examined. No plague infected rat was discovered.

There has been no case of human plague in the colony since 1927.

HELMINTHIC DISEASES

ANKYLOSTOMIASIS.

32. The high infection rate of ankylostomiasis in the rural population has been due originally to the engrais system of night soil disposal, now happily a thing of the past. In the preparation of " engrais " organic refuse composed principally of street sweepings, cane trash and slaughter-house waste was mixed in masonry tanks with human excrement and allowed to ripen until the season arrived for manuring the cane fields. This mixture containing, more often than not, fresh night soil, was then spread broadcast over the canefields where conditions were practically ideal for the development of larval hookworms. The labour employed in the fields could not help becoming infected and it is to this, rather than to the usual means of infection, that the high infection rate in the agricultural community is due.

The abolition of the engrais system was effected indirectly by the Government enacting that every house should have its own latrine ; by the substitution of pit latrines for bucket latrines in areas where the pit latrine could be installed and by prohibiting the use of human faecal material in the preparation of engrais.

It is now over nine years since these enactments were made, but with the means at our disposal we have been able to make only a slight amelioration in the general infection rate. But although the infection rate remains high, the report of the Medical Officer in charge of the Hookworm Campaign (Appendix II) shows that the degree of infection in individual patients has become appreciably lighter and that fewer serious cases are now being seen in the work of this branch of the Department. But in the dispensaries there are still to be found cases of typical hookworm disease which prove most obstinate to outdoor treatment ; though they respond well to hospital treatment. It is also noted by some medical officers that patients very often return after an interval during which they have become as badly infected as they were before.

It is very probable that such patients are not using their latrines ; but prefer to ease themselves on the surface of the ground in the neighbourhood of their dwelling, and that they use the same area as a matter of habit. When this occurs, reinfection of the person can hardly be avoided, and his repeated visits generally result in the development of the classical signs of a heavy infection.

SCHISTOSOMIASIS.

33. The most noteworthy event of the year has been the infection by Dr. Adams, of *Bulinus forskali* with miracidia derived from the ova obtained

from a case of human schistosomiasis kindly sent to the laboratory by Dr. H. André, Government Medical Officer, Pamplemousses. In due course the infected snails began to shed periodically bifid-tailed cercareae having the characteristics of those of the human schistosome worms.

The report on the work of the Bacteriological Laboratory (Appendix I) gives the details of this work which represents the first advance made in this subject in the Colony since the publication of Leiper's classical researches on Egyptian schistosomiasis.

The identification of one, at any rate, of the local molluscan hosts of this worm, has opened the door to further researches on the epidemiology of the disease, the results of which will be published as they accrue.

Enteric or Typhoid Fever.

34. This year the Districts of Grand Port and Savanne have respectively notified 31 and 38 cases of enteric fever. Plaines Wilhems has notified 81 (See Table on page 6). As usual, the source of the infection has not been traced.

The disease shows no special seasonal incidence. This is probably characteristic of it when endemic in a sub-tropical island in which abrupt changes of season, or of rainfall do not occur. It is unlikely that the disease is water-or milk-borne in Plaines Wilhems because in this district the water supply is good, and it is the universal custom in Mauritius for every housewife to have the domestic milk boiled before consumption.

In the rural districts the agricultural population still manifest their preference for running water, as contrasted with that from a pipe. Since any open watercourse in the colony is exposed to human excrementitious pollution, the preference of running water for domestic use may be dangerous. The infection appears to be endemic. Its distribution, so far as one can judge, and the absence of large outbreaks leads one to conclude that spread is largely through personal contact with patient or carrier.

There were, however, during the year small localised outbreaks in Grand Port and Savanne which the Medical Officers in charge of the districts ascribed to the consumption of polluted water.

During the year *Bact. typhosum* and *Bact. paratyphosum* A. were isolated from material sent to the Laboratory.

GENERAL MEASURES OF SANITATION

Night Soil and Conservancy.

35. The report of the Medical Officer of Health describes the night soil and conservancy work done by the Department in Port Louis.

The night soil service at Curepipe is also carried out by the Health Department. Some 1,010 services are performed there daily on an average. The double-bucket system is in operation throughout the Island.

In other parts of the colony where pail services exist, the work has been done either by the local authority, e.g. Rose Hill—Beau Bassin Board of Commissioners, or by contractors working under Government supervision.

The services have been satisfactory upon the whole.

Collection and Disposal of Refuse.

36. This has been effected satisfactorily during the year. The scavenging service at Vacoas is now carried out by the sanitary staff and complaints have been few.

The Port Louis refuse is still used for reclamation, and the operations are not unduly offensive though on account of the pressing need for economy they are not conducted as they would be in more prosperous times. If a top dressing of about one foot or eighteen inches of soil could be applied to the

surface of the dumps after levelling, the appearance of these dumps would be greatly improved. At the present time this is out of the question.

In the townships the Boards are responsible for the conduct of the scavenging services and the work has been satisfactory. In other areas the Government undertakes the work, either directly as in the Rose Belle—Mahebourg Section, or through contractors.

WATER SUPPLIES.

37. The public water supplies in the Colony are fairly satisfactory though a number of them are vulnerable. Some are definitely bad ; while localities in which there is no public water supply depend upon rivers, canals or shallow wells which are all equally dangerous.

The supply for the Central plateau is derived from a lake situated in a protected catchment area. The lake is known as the Mare-aux-Vacoas, and its water is filtered before distribution. The Mare-aux-Vacoas water shows a high degree of purity, but at certain times of the year, principally towards the end of a dry spell, the organic matter in solution increases in quantity and an organism probably *Beggiatoa alba,* is found growing on the sides of the well through which the water coming through the filter passes before entering the distributing system. The occurrence of this growth makes the water smell of sulphuretted hydrogen and gives rise to complaints from consumers. It is remarkable that as soon as rainy weather is re-established and the lake begins to fill up again the nuisance disappears. In spite of this drawback, the Mare-aux-Vacoas water is held in high esteem in the colony largely on account of the safety of the catchment area.

The supply is subjected to a fortnightly bacteriological control and evidence is gradually accumulating which points to something defective in the filtering process. Instead of the filters discharging a water of fairly uniform quality bacteriologically, they have been found to deliver a water whose quality as judged by the number of bacterial colonies grown from samples, varies directly with the quality of the raw water estimated by similar means. This is a disquieting feature which was engaging the attention of the Department of Public Works at the end of the year.

Port Louis is supplied principally from the Grand River North West, though crude river water supplies a small part of the western portion of the town. In the eastern part the supply is derived through the Bathurst canal from the Calebasses river from which it is piped to the town. This supply is probably dangerous.

The Grand River North West water formerly merited the epithet horrible, since it was distributed in the crude state.

Now, however, the water is passed through scrubbing filters and the filtrate chlorinated before distribution. No complaints of taste have been made during the year and, as a matter of fact, the dose of chlorine required to deliver practically a sterile water to the consumer is surprisingly low. For the greater part of the year a dosage of 0.3—0.4 parts per million is found to be sufficient. The chlorination process is carried out under regular bacteriological control by means of a Paterson's chloronome. The chlorinating plant consists of two chloronomes worked alternately so as to give each a period of rest during which it may be thoroughly overhauled and maintained in working order.

38. The typical public water supply of the rural districts consists of a dam constructed across a stream which derives its water from a protected catchment area. From the dam the water is piped to the system of distributing reservoirs and pipes through which it passes to the consumers. The majority of the dwellers in the rural districts take their supplies from public

fountains situated at convenient points. When a fountain is erected, all premises within 1,500 feet of it are rated for a water rate, though provision is made whereby an owner of premises who can prove that he previously maintained a well of wholesome water on the premises may be exempted from payment. It is a pity that such provision was ever made, as in practice it merely offers a means of evading the rate on the part of owners who do not have enough appreciation of hygiene to know that it is worth the small annual payment which is claimed.

It is clear that such a system of water supply is vulnerable ; perhaps too vulnerable in a colony with so high a density of population as this. It implies careful control of the catchment areas to ensure the absence of pollution of the supply. But it is difficult to suggest a means of rendering such supplies safe at reasonable cost. Filtration or chlorination are at present out of the question since they mean the establishment and maintenance of a number of small plants in remote parts of the country, and the cost of maintenance would be higher than the consumers could afford to pay. If a public supply costs too much, especially in an agricultural area populated by people who are of the labouring class, the people are induced to have recourse to other sources of supply manifestly much more dangerous to their health. Though the present system is vulnerable, the actual risks of dangerous pollution are slight. A piped supply is so much superior hygienically to supplies derived from shallow wells or open channels that the risk may be justifiably taken until such time as better times enable measures to be taken which will eliminate it.

Labour Conditions.

39. It would appear that the general hygienic conditions under which contracted servants are housed on estates have been generally satisfactory. There have been no widespread epidemics in the rural areas and the most insiduous and important infections from the economic point of view are hookworm infection and malaria, both of which are endemic and practically widespread.

FOOD IN RELATION TO HEALTH AND DISEASE

40. There are six public and six private abattoirs in the Colony. The public abattoirs administered by the Municipality of Port Louis, the Boards of Beau Bassin, Rose Hill and Curepipe are each controlled by a veterinary officer.

The other abattoirs are conducted under the supervision of the sanitary staff.

The quality of the public milk supply is controlled by the Medical and Health Department.

MEASURES TAKEN TO SPREAD THE KNOWLEDGE OF HYGIENE AND SANITATION

41. The Hookworm control staff deliver talks on hookworm infection and its prevention on the occasions on which mass treatments are being given. The sanitary staff have also been instructed to lose no opportunity of giving advice on hygienic subjects in the course of their routine duties. It is hoped that by entrusting sanitary duties to the Government Medical Officers of the districts, opportunity will be provided for the effective dissemination of a knowledge of elementary hygienic practice in the Colony. It is also hoped that as the Department attains its proper complement it will be able to reinforce the hygienic instruction given in the schools.

TRAINING OF SANITARY PERSONNEL

42. A new scheme has been evolved by Dr. A. C. d'Arifat for the training of the sanitary personnel. The system formerly practised was to require the sanitary staff to attend courses of lectures or informal lecture

demonstrations given by certain members of the professional staff of the Department. It is thought that better results may be obtained by working on a system of what is practically an apprenticeship.

The youth selected for training will be required to be of good physique and satisfactory educational attainments. He will be engaged on three months' probation during which time he will be assigned to a number of the senior sanitary inspectors in turn for short periods. The sanitary inspectors to whom the lad is assigned will be required to report on his suitability for admission to the service. If he is found suitable he will be engaged for a period of eighteen months' tuition during which time he will be paid Rs. 20 per mensem and Rs. 3 per mensem bicycle maintenance allowance. In this tutelary period he will serve for six months with a rural sanitary inspector, a sanitary inspector in a township and in Port Louis. While in Port Louis he will attend lectures and demonstrations given by the members of the professional staff of the Department. At the close of his training he will be examined as to his knowledge of the work and if found competent, will be eligible for appointment in the junior grade of sanitary inspector.

This scheme was being worked out towards the close of the year, as its administrative implications are somewhat far-reaching, some time must elapse before it is put into effect ; a beginning will be made as soon as possible.

RECOMMENDATION FOR FUTURE WORK

43. The great need is still, unfortunately, departmental organisation. Preparations have been made throughout the year for adjusting anomalies and integrating the organisation in accordance with the approved scheme. It is expected that the junior posts may be properly organised by the beginning of the financial year 1934-35 which opens on 1st July 1934. The Health Centre Organisation cannot yet be put into effect ; partly on financial grounds ; and partly for other reasons. It is proposed to establish the system on trial in the District of Pamplemousses which will receive its full complement of staff which will work along health centre lines. On the result of this trial will depend the extension of the system to the Colony as a whole.

As the author of the system I have no doubt whatever of its practicability ; but such wide differences are apt to occur between theory and practice that it will be prudent to give the new machine a trial run before putting upon it its full load.

IV.—Port Health Work and Administration.

44. The following table summarises the work done by the Port Sanitary Authority.

	Sailing Craft	Steamers
Vessels arriving	4	215
Crew examined	57	19,445
Passengers examined	87	2,991
Vessels given pratique on arrival	4	150
Vessels given pratique after disinfection of the dirty linen and effects of the passengers, crew, fumigation and disinfection of the fore-castle		8
Vessels given pratique after disinfection of dirty linen, etc. and claytonisation of cargo		57
Vessels arriving from infected ports		65
Vessels detained for purposes of disinfection and fumigation on account of plague, cholera and small pox ...		65

V.—Maternity and Child Welfare.

45. There are three agencies in Mauritius devoted to the prosecution of work on behalf of mothers and babies. Two of these agencies are voluntary societies: (a) the Mauritius Child Welfare which works at present in the District of Plaines Wilhems and Grand Port, and (b) The Oeuvre Pasteur de la Goutte de Lait confining its activities to Port Louis. Both do excellent work among the labouring classes, and the Government and other public bodies have recognised the value of the work they do by contributing to their revenue by grants from public funds. The de Chazal Fund has also made substantial contributions.

The direct activities of the Government have been limited to the training of midwives (see the following paragraph) and to the provision of a trained midwife at each of the rural hospitals. The duties of the hospital midwife consist of visiting expectant and nursing mothers, giving them advice and attempting to persuade mothers to entrust the conduct of their confinement to qualified persons. Few of these midwives are of Indian race and the efforts to persuade the Indian community to abandon their traditional methods and to have their confinements conducted according to modern standards are still very disappointing. A still more disappointing feature is the apparent lack of Indian women of sufficiently good education to enable them to attain the modest standard laid down for candidates for midwifery scholarships, so that we are faced with this situation that the Indian community will not employ midwives who are not of their own race and are unable to produce suitable women of their own race for training. So long as these circumstances persist, little progress can be expected.

46. Summary of the work performed by the visiting midwives in 1933.

	No. of visits made	No. of confinements conducted
Curepipe	346	58
Grand Port	1,742	189
Flacq	391	31
Rivière du Rempart	251	146
Savanne	131	41

VI.—The Midwives Board.

47. This Board held 3 sittings during the year. The composition of the Board was as follows:

The Director, Medical and Health Department,—*Chairman.*
The Medical Superintendent, Civil Hospital.
The Medical Superintendent, Victoria Hospital.
Dr. E. Duvivier.
Dr. R. David.

48. Three applications for registration were considered, and the Board being satisfied that the applicants were of good character and otherwise eligible, ordered that their names be entered on the Register of Midwives.

Eleven candidates were selected for training as midwives in the different hospitals in the Colony. On the 21st February and 22nd August, 1933 the Board held an examination for the award of certificates as second class midwives ; 9 succeeded in obtaining their certificates (3 in February and 6 in August).

The Board, at its meeting held on the 13th March, 1933, decided that as the number of registered midwives and labour attendants was sufficient to meet the needs of the population, the midwife Ordinance, 1926, should be enforced. This decision was subsequently approved by Government and has since been enforced.

49. The Regulations published under G.N. No. 180 of the 30th July, 1927, provide for two classes of midwife. The first class for literate persons of a good general education, the second class for women illiterate or uneducated but of known respectability and capacity. The policy of the Board is, naturally, to encourage the training of midwives of the first class rather than those of the second, but local conditions make the recognition of a second class indispensable in the meantime.

VII.—Hospitals.

50. The circumstances causing a diminution in mortality have also caused a diminution of morbidity: the number of in-patients treated in the hospitals of the Colony falling from 28,472 to 27,689. The number of confinements conducted in hospitals was 1,004 against 760 for the previous year.

The number of Estate hospitals at the end of the year was 39.

51. The Following Table Summarises the Work of the Individual Hospitals.

Hospitals.	Patients remaining on 31/12/32	New Admissions	Deaths	Patients remaining on 31/12/33	No. of beds	No. of Surgical operations	Particular diseases causing largest number of admissions.	Particular diseases causing largest number of deaths.
Civil	181	7,557	469	155	289	2,813	Influenza, Malaria, Dysentery, Tuberculosis, Syphilis, Pneumonia, Bronchitis, Lymphadenitis, Ankylostomiasis, nephritis, abscesses, wounds and Gestation.	Malaria, Tuberculosis, Pneumonia, Broncho-pneumonia, Enteritis, Ankylostomiasis and Nephritis.
Port Louis Prison ...	4	404	2	1	16	12	Malaria, Influenza, Bronchitis, Dysentery and diseases of Digestive System.	Pulmonary Tuberculosis and Pneumonia.
Long Mountain ...	20	1,734	103	20	60	125	Malaria and Ankylostomiasis.	Pneumonia and Tuberculosis.
Poudre d'Or ...	7	1,920	39	11	70	160	Ankylostomiasis and Malaria.	Ankylostomiasis and Malaria.
Flacq	34	2,232	143	31	86	209	Malaria and Ankylostomiasis.	Pneumonia and Pulmonary Tuberculosis.
Mahebourg	52	3,267	162	50	108	765	Ankylostomiasis and Abscesses.	Ankylostomiasis and Pneumonia.
Souillac	40	1,997	100	30	103	404	Ankylostomiasis.	Ankylostomiasis.
Victoria	137	5,654	305	98	254	1,753	Malaria, Ankylostomiasis, and Abscesses.	Nephritis, Ankylostomiasis and Dysentery.
Beau Bassin Prison ...	3	244	4	3	32	26	Malaria, Dysentery, Influenza and Cellulitis.	.....
Moka	25	1,846	108	19	83	779	Malaria, Dysentery, Appendicitis and Ankylostomiasis.	Dysentery and Ankylostomiasis.
Mental (Infirmary for physical diseases)	4	311	35	10	62	153	Influenza, Malaria and Epilepsy.	Pneumonia, Phthisis, Acute Enteritis and Nephritis.
Barkly Industrial School	—	16	—	—	12	2	Malaria.	
	507	27,182	1,470	428	1,175	7,201		

HOSPITAL ADMINISTRATION

52. In order to compare the expenditure of the hospitals with one another a return was required from each showing the daily expenditure incurred per patient under a number of items of the Estimates. The items were: "Travelling and Transport," "Services rendered by the Railways," "Provisions, fuel and lighting"' "Drugs and instruments"' "Implements, stores and disinfectants," "Clothing, bedding, uniforms and washing," and "Extra assistance, Medical and other." These items include the greater part of the provision made on behalf of the hospitals. They do not include, however, the personal emoluments of the permanent staff. The following figures show the daily average expenditure per patient for 1933:

Hospital		Average cost per patient daily
		Cents
Group A—Flacq	... ...	57
Mahebourg	... ...	59
Souillac	... ...	53
Long Mountain	... ...	67
Poudre d'Or	... ...	57
Group B—Victoria	... ...	76
Civil	... ...	82
Moka	... ...	83
Group C—Leper	... ...	54
Mental	... ...	36

The hospitals have been grouped according to the work required of them. The establishments of Group A take medical and simple surgical cases, surgical operative work is restricted as much as possible; patients requiring operative treatment being drafted to the hospitals of Group B. The Group B are general hospitals with a preponderance of surgical wards. Victoria and Moka hospitals have wards for the reception of first class paying patients whose dietary and equipment are more expensive than those of the third class and pauper patients so that the daily average cost per patient is a good deal higher than it is in hospitals of Group A. The C Group comprises the residential institutions. The figures in this group are scarcely comparable because the Mental hospital patient-days amount to over 63,000 whereas those of the Leper hospital number only 4,000.

53. These figures show that the cost of maintenance of patients is very moderate, and it reflects credit upon those responsible for the careful and efficient management of the institutions under their charge.

VIII.—Dispensary Returns.

54. The dispensaries and the hospital out-patient departments were consulted by male patients 117,135 times, and by female patients 112,222 times; total: 229,357.

The number of new cases during the year amounted to 168,291. In 1932, 178,784 cases were recorded.

In 1931 as an emergency measure, an old motor lorry belonging to the Department was converted into a travelling dispensary which toured part of Pamplemousses District at stated intervals. The work done by the Medical Officers in charge was greatly appreciated by the inhabitants of the area through which the dispensary toured, who would otherwise have been obliged to walk several miles for their attention.

On account of the density of population in this area, the travelling dispensary has been maintained throughout the year. By this means 2,025 male cases, and 4,702 female cases were treated with a total of 13,289 consultations for the year.

IX.—Prison Hygiene.

55. Prison hygiene has been maintained at its usual high standard. There have been no serious outbreaks of communicable disease at either prison and the quarantine system in force has kept the Central Prison, in which the long sentence prisoners are confined, fairly free from the commoner infections.

The principal affections met with in the criminal classes are Scabies, which is extremely common throughout the Colony, and venereal disease.

X—Meteorology.

56. The Director of the Observatory has kindly furnished the following table:

METEOROLOGICAL RETURN FOR THE YEAR 1933.

FROM THE RECORDS OF THE ROYAL ALFRED OBSERVATORY 178 FEET ABOVE SEA LEVEL.

MONTHS	TEMPERATURE °C.				HUMIDITY		RAINFALL	WIND		REMARKS
	Mean of daily minimum on grass °C.	Mean of daily shade maxima °C.	Mean of daily shade minima °C.	Mean daily range °C.	Mean °C.	Mean Percentage	Amount in inches	Resultant Direction	Mean recorded speed m/s	
January	20.8	30.6	22.8	7.8	26.3	75.1	5.22	E.N.E.	2.94	A quiet year with no winds of gale force and no particularly heavy rains. Rainfall at the Observatory 30% below normal, driest year since 1900: for the island in general about 20% below, driest year since 1915.
February	20.5	29.6	22.5	7.1	25.8	78.8	6.41	E.	2.86	
March	20.9	28.4	22.9	5.5	25.4	82.5	7.48	E. by S.	3.51	
April	19.9	27.8	22.1	5.7	24.5	79.7	2.60	E. by S.	3.53	
May	16.7	26.5	19.2	7.3	24.0	76.9	1.17	E. by S.	3.08	
June	15.0	24.7	17.7	7.0	22.3	78.1	2.93	E. by S.	3.44	
July	13.1	23.3	15.7	7.6	19.1	76.2	2.24	E. by E.	3.39	
August	13.1	23.8	15.7	8.1	19.4	73.6	1.35	S.E. by E.	3.38	
September	15.4	23.8	17.0	6.8	19.9	70.5	2.18	E.S.E.	4.23	
October	16.5	26.4	18.1	8.3	21.8	69.4	0.73	E. by S.	3.56	
November	18.3	28.0	19.8	8.2	23.3	68.2	0.46	E. by S.	3.69	
December	19.6	29.6	21.2	8.4	24.9	72.4	2.00	E.	2.98	
Year	17.5	26.9	19.6	7.3	23.1	75.1	34.77	E. by S.	3.37	

XI.—General.

River Reserves Board.

57. The River Reserves Board : of which the Medical Director is Chairman met on 2 occasions. The history of the Board is an interesting one and it may not be out of place to recall its salient features.

In 1875 an ordinance was enacted to make provision for the conservation of woods and forests on the Crown Reserves and other plantations, and also to protect watercourses. It lays down that river reserves, which are the property of the riparian land owners, shall be 50 : 25 and 10 feet in width, in the case of river rivulets and feeders respectively. These reserves are to be maintained under timber. It, however allows riparian owners to remove brushwood on condition that they plant useful or ornamental trees under the direction of the Department of Woods and Forests. It further enacts that it shall be unlawful to plant reserves except with certain trees or to cultivate any reserves except under shelter of such trees and in the manner prescribed by the Director of Forests (now Conservator of Forests). Power is given to the Governor to authorise cultivation of reserves by other means in certain circumstances.

Since the main ordinance has been enacted the reserves have been more than once assailed on sanitary grounds. They were alleged to favour pollution of the watercourses by providing cover for persons easing themselves on the banks of the streams they bordered: they were thought to favour malaria because of the shelter they afforded to mosquitoes. Moreover, where the trees in the reserves were lofty, growth of sugar cane in the vicinity was interfered with. Their only useful function appeared to be the prevention of erosion of the stream banks and they were also thought to exert a favourable influence on the climate of their immediate neighbourhood, by conserving a certain amount of moisture in the soil.

The discovery that *Anopheles costalis,* the mosquito most concerned with the spread of malaria in the Colony, did not breed in shaded pools but only in those exposed to sunlight was the decisive factor in the maintenance of the river reserves. A committee was appointed to enquire into and report upon the management of river reserves. The committee reported in 1919 and recommended the creation of a River Reserves Board composed of the Directors of the Health and Forest Departments. The Board was to be provided with two special executive officers having some knowledge of sanitation and forestry and given the status of Forest Inspector. Their duties would be to supervise generally the management of the reserves, to check carefully all growing stock in the neighbourhood of estate camps, to attend to the numerous applications which were daily received for the removal of dead, dying, diseased or otherwise useless trees and to supervise the replanting of denuded areas.

This organisation was brought into being and functioned until 1930, when the River Reserves Inspectors were absorbed by the department of Woods and Forests. In 1932 the Financial Commission made recommendations for the drastic curtailment of the department of Woods and Forests. Strict control of the reserves became impossible and the duty of occasional patrol was entrusted to the Police.

58. It is hoped that the importance of the river reserves in the central part of the Colony will become more generally appreciated than it has been in the past and that the public will co-operate with the Police in ensuring

their preservation. Much misconception has reigned both in the public and in the official mind on this question. The observations of the Financial Commissioners who examined this subject in 1930-31 showed how completely the problem of their maintenance was misunderstood. Patrol is not necessary to protect the reserves from the enlightened: it is necessary to protect them from the depredations of the ignorant and unscrupulous, who are to be found in every community ; Mauritius being no exception to the general rule. It is most important that the reserves should be preserved as a means of preventing anopheline breeding in the streams concerned.

59. It is my pleasant duty to thank all members of the Department for their willing co-operation in the work recorded here.

J. BALFOUR KIRK,
Director.

APPENDIX I

Annual Report of the Bacteriological Laboratory for the Year 1933.

STAFF, 1933

Pathologist and Superintendent : A. R. D. Adams, M.D., D.T.M.
Acting Analytical Chemist : F. J. R. Momple, M.B., C.M., D.P.H.
Acting Assistant Bacteriologist : L. Masson.
Acting Scientific Assistant : L. Webb.
Laboratory Assistant : R. Avice du Buisson.
Acting Assistant : A. Nemorin.
Acting Junior Microscopist : O. Bechet.
Student and Student-Clerk : A. Furlong.

ADMINISTRATION AND CHANGES IN STAFF

There were no changes in staff other than that unfortunately caused by the sudden death of Dr. F. J. R. Momplé, the Acting Analytical Chemist, on November 16th. Mr. M. J. P. de Sornay was locally and temporarily appointed to perform certain of the Government Analyst's duties until a full-time man could be posted to the laboratory staff, and he commenced his part-time work on December 18th.

Mr. Avice du Buisson, Laboratory Assistant, proceeded on European leave on October 2nd. No other European leave was granted to members of the staff in the course of the year.

The bench equipment and suitable lighting and sink apparatus have not yet come to hand, and so the improvements hoped for in these directions are yet to be undertaken. The lack of adequate light for microscopical work is a very considerable handicap to the attainment of efficiency in critical microscopy, and the inadequate sink accommodation is a source of considerable annoyance in work involving the constant use of tap-water. At the present moment to fill a litre flask or long cylinder is a task of some magnitude, and requires a certain amount of ingenuity on the part of the operator, unless he takes the vessel to a stand pipe outside the building—hardly a satisfactory solution in an institution of this nature.

The Kahn test has continued in use as the standard routine serum-diagnostic test for Syphilis and has continued to give every satisfaction to all concerned. Early in the year a number of strains of bacteria were obtained from the Lister Institute to replace old strains that had been kept at the laboratory for a great number of years, and which had deviated very considerably in their reactions from the types. In addition " H " and " O " strains of Typhoid and the para-Typhoid organisms were obtained, together with a number of standard emulsions of, and antisera for, sundry bacteria. From these standards emulsions of the various organisms were standardised at this laboratory, and have since been used for all agglutination tests performed here. The practice of determining the titre of both " H " and " O " agglutinins in the sera sent for the Widal test in suspected cases of Typhoid Fever has been adopted, and the results have been both interesting and, we believe, of considerable practical value to the medical men sending specimens for serological diagnosis. The advantage of determining each titre separately can be the more readily appreciated when it is realised that many

of the sera tested are from persons who have been, probably repeatedly, inoculated with T.A.B. vaccines ; and the method of recording the results in the form of " Reduced Titre " (R.T.) has many advantages for a population which travels extensively abroad.

The preparation of B.C.G. vaccines, both for humans and bovines, has continued ; and, so far as we are aware, their use has been unaccompanied by accidents or undesirable sequelae. The demand for this vaccine for new-born children is considerable in the island, and its use is advocated as a routine by a large proportion of the medical men locally. The Government of Réunion approached the Government of Mauritius as to the possibility of our supplying that Colony with a bi-monthly consignment of the vaccine for human usage, and as a result the laboratory now sends 120 ampoules, in two consignments, each month by the mail steamers to Réunion.

A more careful and thorough method of identifying the various organisms which previously would have been called Loeffler's bacillus has now been adopted as the standard practice, and a definite diagnosis of this bacillus is not made until the organism has been isolated and found to conform to the sugar reactions usually associated with that species. Careful examination of a number of strains led to the belief that in the past a number of organisms may have been wrongly identified, a matter of considerable importance more particularly where the segregation of carriers is concerned.

During the year a number of investigations considered of value to the colony was undertaken, and the more important of these are dealt with in some detail in the section " Research." A pamphlet was also prepared and printed at the Government Press on the methods of collection, and the preparation, of material for transmission for laboratory examinations under local conditions. This little booklet was intended for circulation to Government medical officers and others wishing for information on the subject of laboratory procedure, and indicated the first steps to be taken for their successful execution. A series of four small popular articles, dealing with the prevention of infection with the intestinal protozoa and with the three groups of intestinal helminths was also written and published in the News Supplement to the Official Gazette of the Colony. This series was to have been extended to embrace other parasitic and bacterial infections prevalent in the island, but discontinuance of the supplement brought it to an untimely close.

LABORATORY RECEIPTS IN THE FORM OF FEES

The fees collected at the laboratory for examinations performed at the request of practitioners with clients stated to be capable of paying for them on the statutory scale laid down in the ordinance of 1927 amounted this year to Rs. 2,978.09 Cs. ; to this amount must be added the sum of Rs. 1,292.96 Cs. which was paid in to the District Courts, or to the Head Office, and a further sum of Rs. 1,253.75 Cs. received from the sale of bovine B.C.G vaccine to stock-breeders in the island. An additional amount of Rs. 280.00 Cs. was received from the Government of Réunion for human B.C.G. supplied to that Territory. The total amount of revenue of the laboratory was therefore Rs. 5,804.80 cs. ; this amount is slightly greater than that collected in the previous year.

ROUTINE EXAMINATIONS

A total of 9,097 specimens was received at the laboratory during the year for the usual laboratory diagnoses and investigations. The figure once more is greater than that of the preceding year (7,650). The nature of these examinations can be seen from the ensuing subheadings to cover a wide sphere of laboratory work in all the fields ancillary to medicine.

For convenience the routine examinations are again recorded under the broad and arbitrary sub-headings previously employed ; these include the following:

I. PATHOLOGICAL SECTION.
II. BACTERIOLOGICAL SECTION.
III. BIOCHEMICAL SECTION.
IV. MISCELLANEOUS SECTION.
V. RESEARCH.
VI. MEDICO LEGAL SECTION.

Each of these is divided into a number of sub-sections embracing the various types of examinations performed during the year.

I.—Pathological Section.

A.—Routine clinical examinations were performed on the following samples of material.

(*a*) BLOOD (MICROSCOPICAL).

Counts of red and white cells and estimation of haemoglobin	...	47
Differential leucocyte counts	...	80
Films for malarja parasites		
Plasmodium vivax	found in	19 specimens.
Plasmodium falciparum	found in	2 specimens.
Plasmodium malariae...	found in	2 specimens.
Plasmodium vivax and *Plasmodium falciparum*	found in	1 specimen.
No malaria parasites	found in	155 specimens.
Total examined		179
Films for microfilaria.		
Wuchereria bancrofti	found in	12 specimens.
No microfilaria	found in	63 specimens.
Total examined		75

(*b*) FAECES (MICROSCOPICAL).

Total examined, 680.

Helminths :		
Trichuris ova	found in	383 specimens.
Ascaris ova	found in	150 specimens.
" Hookworm "ova	found in	144 specimens.
Strongyle larvae	found in	26 specimens.
Enterobius vermicularis ova	found in	1 specimen.
Protozoa :		
Entamoeba histolytica	found in	40 specimens.
Entamoeba coli	found in	47 specimens.
Vegetative entamoebae	found in	17 specimens.
Trichomonas hominis	found in	26 specimens.
Giardia intestinalis	found in	16 specimens.
Chilomastix mesnili	found in	5 specimens.
Balantidium coli	found in	1 specimen.
Coprozoic flagellates	found in	1 specimen.
Coprozoic amoebae	found in	1 specimen.
Blastocystis hominis	found in	93 specimens.
No helminths or protozoal parasites ...	found in	179 specimens.

(*c*) URINE (CLINICAL QUALITATIVE).

Ordinary full clinical qualitative analysis ...	performed on 209 specimens.
Qualitative tests for acetone	performed on 6 specimens.
Qualitative tests for biliary pigments ...	performed on 2 specimens.
Qualitative tests for urobilin	performed on 2 specimens.
Qualitative tests for haemoglobin ...	performed on 1 specimen.
Qualitative tests for albumose	performed on 1 specimen.
Ehrlich's diazo reaction	performed on 1 specimen.

Microscopical examination of centrifuged deposits of 305 specimens. revealed the presence of :

Hyaline casts	in 55 specimens.
Granular casts	in 48 specimens.
Leucocytic casts casts	in 6 specimens.
Cellular Casts	in 3 specimens.
Waxy casts	in 3 specimens.
Schistosoma haematobium ova	in 19 specimens.
Ascaris ova	in 2 specimens.
Trichuris ova	in 1 specimen.

(*d*) SPUTUM (MICROSCOPICAL).

Total number of specimens examined 358.

Mycobacterium tuberculosis	found in 72 specimens.
Pneumococci	found in 5 specimens.
Streptococci	found in 3 specimens.
Neisseria catarrhalis	found in 2 specimens.
Micrococcus tetragenus	found in 1 specimen.
Spirochaetes	found in 1 specimen.

(*e*) CEREBRO-SPINAL FLUID.

Total number of specimens examined 99.

Leucocyte counts	performed on 40 specimens.
Differential leucocyte counts	performed on 15 specimens.
Red cell count	performed on 1 specimen.
Nonne-Apelt test for globulin	performed on 28 specimens.
Quantitative estimations of albumen ...	performed on 7 specimens.
Quantitative estimations of glucose ...	performed on 2 specimens.
Meningococci	found in 1 specimen.
Pneumococci	found in 1 specimen.
Gram negative bacilli	found in 1 specimen.

(*f*) THROAT AND NASAL SWABBINGS (MICROSCOPICAL).

Total number of specimens examined 138.

Corynebacterium diphtheriae	found in 18 specimens.
Vincent's fusiform organisms	found in 5 specimens.
Streptococci	found in 4 specimens.
Staphylococci	found in 1 specimen.
Leptothrix	found in 1 specimen.

(*g*) PUS, DISCHARGES, SCRAPINGS, ETC. (MICROSCOPICAL).

Total number of specimens examined 69.

Neisseria gonorrhoeae	found in 14 specimens.
Staphylococci	found in 8 specimens.
Corynebacterium xerosis	found in 2 specimens.
Streptococci	found in 1 specimen.

B.—Post mortem examinations, and histological section of 74 specimens of material was made in the course of the year. The following are the findings in a number of these specimens, the remainder proving to be normal tissues.

(*a*) NEOPLASTIC TUMOURS.

Carcinomata.

Peritoneum, caecum, ovaries, bladder, axillary glands and uterine curettings	6 specimens.
Epitheliomata of eyelids, penis, vagina and skin ...	6 specimens.
Adenocarcinomata of floor of mouth and pylorus ...	2 specimens.
Columnar carcinoma of transverse colon	1 specimen.
Endothelioma of glans penis	1 specimen.

Sarcomata.

Spindle-celled of occiput	1 specimen.

(*b*) BENIGN TUMOURS.

Inflammatory conditions of cervix uteri, breasts and lymphatic glands	4 specimens.
Acute and chronic inflammatory vermiform appendices ...	5 specimens.
Schistosomal infiltration of vermiform appendices ...	2 specimens.
Acute enteritis of large and small bowels	2 specimens.
Cystadenoma of thyroid gland	1 specimen.
Fibrocystic conditions of the ovary	3 specimens.
Adenofibromata and adenomata of the cervix uteri ...	7 specimens.
Adenofibromata and other benign tumours of the breast ...	5 specimens.
Pyosalpinx, and inflammatory conditions of the Fallopian tubes	3 specimens.
Fibromyomata of the body of the uterus	4 specimens.
Stripping of the retina	1 specimen.
Fibromatous tumour of plantar fascia	1 specimen.
Cerebral abscess	1 specimen.
Tuberculous glands	1 specimen.
Subacute encephalitis	1 specimen.
Fibrous epulis of jaw	1 specimen.
Undeveloped testis and hydrocoele of the cord	1 specimen.
Acute haemorrhagic pancreatitis	1 specimen.

II,—Bacteriological Section.

A.—Cultural examinations for the determination of the presence and type of pathogenic micro-organisms were made on 937 samples of material as follows:

(*a*) BLOOD.

Total number of specimens 50.

Bacterium typhosum	recovered from 9 specimens.
Bact. coli communior	recovered from 1 specimen.
Staphylococci	recovered from 1 specimen.
No pathogenic organisms	recovered from 39 specimens.

(*b*) FAECES.

Total number of specimens 79.

Bact. shigae	recovered from 9 specimens.
Bact. dysenteriae (Flexner)	recovered from 3 specimens.
Bact. enteritidis (Gaërtner)	recovered from 2 specimens.
Bact. faecalis alkaligenes	recovered from 3 specimens.
Ps. pyocyanea	recovered from 1 specimen.
Bact. pseudo-asiaticum	recovered from 1 specimen.
Bact. coli communior	recovered from 1 specimen.

(*c*) URINE.

Total number of specimens 108.

Bact. coli communior	recovered from 19 specimens.
Bact. coli commune	recovered from 15 specimens.
Ps. pyocyanea	recovered from 3 specimens.
Bact. acidi lactici	recovered from 3 specimens.
Bact. lactis aerogenes	recovered from 2 specimens.
Staphylococci	recovered from 2 specimens.
Streptococci	recovered from 1 specimen.
Bact. asiaticum	recovered from 1 specimen.
Bact. para-colon (Day)	recovered from 1 specimen.
Bact. kandiensis	recovered from 1 specimen.
Bact. ambiguus	recovered from 1 specimen.
Bact. paratyphosum A	recovered from 1 specimen.
Organisms of the Salmonella group	recovered from 1 specimen.
No pathogenic organisms	recovered form 57 specimens.

(*d*) SPUTUM.

Total number of specimens 5.

Pneumococci, streptococci and *N. catarrhalis*	recovered from 3 specimens.
Pneumococci and streptococci	recovered from 1 specimen.
Staphylococci	recovered from 1 specimen.

(*e*) CEREBRO-SPINAL FLUID.

Total number of specimens 4.

Pneumococci	recovered from 2 specimens.
Streptococci	recovered from 1 specimen.
No organisms	recovered from 1 specimen.

(*f*) THROAT AND NASAL SWABBINGS.

Total number of specimens 595.

Corynebacterium diphtheriae	recovered from 104 specimens.
Staphylococci	recovered from 5 specimens.
Streptococci	recovered from 3 specimens.
Hoffman's bacillus	recovered from 3 specimens.

(*g*) PUS, DISCHARGES, SCRAPINGS, ETC.

Total number of specimens 96.

Staphylococci	recovered from 54 specimens.
Streptococci	recovered from 9 specimens.
Staphylococci and streptococci	recovered from 6 specimens.
Streptococci and *Bact. coli commune*	recovered from 1 specimen.
Bact. coli commune	recovered from 1 specimen.
Pneumococci	recovered from 1 specimen.
Gonococci, staphylococci and diphtheroid bacilli	recovered from 1 specimen.
Gonococci and diphtheroid bacilli	recovered from 1 specimen.
Clostridium welchii	recovered from 1 specimen.

B.—Vaccines.

The following autogenous vaccines were prepared from organisms isolated from material sent to the laboratory. A total of 100 autogenous vaccines was made in the course of the year from :

(*a*) BLOOD.

Total vaccines prepared, 7.

Bacterium typhosum	from 6 specimens.
Bact. coli communior	from 1 specimen.

(*b*) FAECES.

Bact. coli communior	from 1 specimen.

(*c*) URINE.

Total vaccines prepared, 25.

Bact. coli communior	from 11 specimens.
Bact. coli commune	from 7 specimens.
Ps. pyocyanea	from 3 specimens.
Bact. asiaticum	from 1 specimen.
Bact. acidi lactici	from 1 specimen.
Bact. para-colon (Day)	from 1 specimen.
Staphylococci	from 1 specimen.

(*d*) SPUTUM.

Total vaccines prepared, 4.

Pneumococci, streptococci and *N. catarrhalis* ...	from 3 specimens.
Pneumococci and streptococci	from 1 specimen.

(*e*) CEREBRO-SPINAL FLUID.

Total vaccines prepared, 1.

Streptococci	from 1 specimen.

(*f*) PUS, DISCHARGES, SCRAPINGS ETC.

Total vaccines prepared, 62.

Staphylococci	from 46 specimens.
Streptococci	from 7 specimens.
Staphylococci and streptococci	from 6 specimens.
Pneumococci	from 1 specimen.
Gonococci, staphylococci and diptheroid bacilli ...	from 1 specimen.

In addition to the above autogenous vaccines many doses of stock vaccines were prepared and issued. These comprised the following preparations.

T.A.B. vaccine for prophylaxis	530 doses.
T.A.B. vaccine for protein shock therapy ...	85 doses.
Edo dysentery vaccine	817 doses.
B.C.G. vaccine (human)	1,874 doses.
B.C.G. vaccine (bovine) (to Agricultural Dept.) ...	1,502 doses.
Besredka's antivirus from mixed staphylococci ...	21 litres.
Besredka's antivirus from mixed streptococci ...	21 litres.

C.—Serological examinations for agglutination and specific tests for Syphilis and allied tests.

The following results were obtained with 4,353 specimens of serum and cerebro-spinal fluid submitted for examination by serological tests.

(*a*) BLOOD SERUM.

Kahn test.

Negative	in	1,747 samples.
Doubtful	in	201 samples.
+	in	452 samples.
+ + ...	in	662 samples.
+ + + ...	in	526 samples.
+ + + + ...	in	186 samples.
Insufficient quantity of serum	in	23 samples.
Unsuitable for test (heavily haemolysed or infected sera)	in	61 samples.
Tubes broken	in	16 samples.
		3,874

Agglutination tests.

Agglutinated by *Bact. typhosum* " H " serum	...	111 specimens.
Agglutinated by *Bact. typhosum* " O " serum	...	47 specimens.
No agglutination with *Bact typhosum* " H " serum		203 specimens.
No agglutination with *Bact. typhosum* " O " serum		63 specimens.
No agglutination with *Bact. paratyphosum* A serum	...	8 specimens.
No agglutination with *Bact. paratyphosum* B serum	...	8 specimens.
		440

(*b*) CEREBRO-SPINAL FLUID.

Kahn test.

Negative	...	in 31 samples.
+	...	in 2 samples.
+ +	...	in 3 samples.
+ + +	...	in 3 samples.

D.—Water examinations.

Weekly examinations of the Port Louis water supply were again a routine procedure throughout the year, and the results were very satisfactory as far as the Pailles chlorination plant was concerned. The water from this plant has been uniformly good on each occasion it has been examined.

Bimonthly examinations have also been made of the Mare-aux-Vacoas supply, and the bacterial content of the raw water, of the waters from the outlets of several filters, and of two or three samples of the mixed filtered waters at the plant and as delivered to the consumer, were made on each occasion. An ominous feature of this supply has been the enormous periodic variation in the quality of the mixed filtered waters ; and at times this water has reached an undesirably low standard for a filtered public supply. There is little doubt that the filters require radical overhauling ; some of the individual filters have been in use for over forty years without reconstruction or cleaning of the lower pebble and stone layers, and it is hardly to be expected that they will continue to give adequate service indefinitely, without reconstruction from time to time. From the bacteriological standpoint it is fortunate that the raw water from the lake is of an exceptionally high standard, and this is attributable to the fact that the catchment area is an excellent one in so far as possibility of contamination is concerned. Were this not the case the water passed into the mains for public consumption would have to conform uniformly to a considerably higher standard than is at present the case.

Certain other water analyses have been made at periods during the year for private individuals and sugar estates ; and opinions have been submitted to these persons as to the potabilities of their various supplies.

III.—Biochemical Section

Qualitative and quantitative examinations were made on the following 773 specimens :

(*a*) BLOOD.

Quantitative estimation of urea	...	on 583 specimens.
Quantitative estimation of chlorides	...	on 46 specimens.
Quantitative estimation of glucose	...	on 24 specimens.
Detection of alcohol	...	on 2 specimens.
Van den Bergh reaction	...	on 1 specimen.
		656

(*b*) URINE.

Quantitative estimation of sugar	...	...	on 69 specimens.
Quantitative estimation of albumen	...	...	on 33 specimens.
Quantitative estimation of phosphates	...	...	on 6 specimens.
Quantitative estimation of chlorides	...	...	on 2 specimens.
Quantitative estimation of urea	...	...	on 2 specimens.
			112

(*c*) FAECES.

Tests for bile salts	...	...	...	on 3 specimens.

(*d*) HUMAN MILK.

Chemical analysis of a single specimen.

(*e*) FLUID FROM PLEURA.

Rivalta's reaction on a single specimen.

IV.—Miscellaneous

Again an opportunity was afforded by sundry practitioners and medical officers of examining interesting material, and certain of these gentlemen were good enough to enable the pathologist to examine and study a number of interesting cases. Among the more outstanding items may be mentioned the following :

1. *Acute haemorrhagic pancreatitis.*—The patient, an Indian, died suddenly in the middle of some festivities and the question of poisoning arose. Dr. Bouloux performed a post-mortem examination, and brought the organs to the laboratory for further study. A microscopic examination and histological section confirmed the diagnosis, and the case was thought of sufficient interest to record in the literature, where fuller details will be found.

2. *Plasmodium tenue.*—A case with blood parasites presenting the features of this " species " was recorded in the last annual report, and early this year a blood-film was sent to the laboratory from the malaria branch containg large numbers of protozoa again possessing the characters by which it is identified. Unfortunately only a single slide was taken before the patient was put on treatment.

3. *Bertiella studeri.*—This rare Cestode was first recovered from man in Mauritius in 1913, and portions of the original specimen are still in the possession of the laboratory. Another worm was found in the laboratory early this year, and had been sent here in 1929 by Dr. Duvivier ; it had been preserved but not positively identified. A second specimen was noticed about the same time in the Prison museum at Beau Bassin, and by courtesy of Dr. Maingard it was sent to the laboratory for further examination. These worms are sufficiently rare to be of considerable interest, and, accordingly, they were thoroughly studied and a communication on them, together with a review of the previously recorded cases, was sent for publication in a scientific journal. The two specimens mentioned above were the seventh and eighth reported from man ; the parasite is normally one of primate.

4. *Surra.*—In spite of the enormous cervine population in the island disease would appear to be rare among the local stags (*Cervus unicolor* var.) In May, however, large numbers of these animals were found dead and dying at Solesse, and the Government Veterinary Surgeon asked for laboratory assistance in conducting an enquiry into the cause of the mortality. Several

sick beasts were shot and on post mortem all were found to be in an advanced state of the disease, surra. Smears were made from various organs, animals inoculated from infected bloods, and the diagnosis established by these and other laboratory means. The occurrence caused much natural alarm among the many landed proprietors of the island, and fears were expressed as to the danger of the disease spreading further than the immediately affected area. This did not happen however, and it would appear that the epidemic, after a very high mortality, came to an end in a few months. Bloods from a number of beasts shot both in the same locality and elsewhere during the hunting season were later examined, but the parasite was not recovered from any of the thirty odd studied. There appears little doubt that the disease is rapidly fatal to the infected deer and that they do not act as a host in the way that the African antelope do for n'gana. In conjunction with M. Lionnet full details of the outbreak were published in a scientific journal.

5. *Sprue.*—A possible case of sprue was referred to in the last annual report, and further investigation confirmed the belief that this provisional diagnosis was correct. Treatment by the usual methods resulted in, apparently, complete recovery ; the patient was able in three months' time to revert to a manner of life foreign to him for some years, and to continue in seemingly normal health.

6. *Impacted Omental hernia with abscess formation.*—An interesting and unsual specimen was sent to the laboratory by Dr. du Vergé, Superintendent of Victoria Hospital. The specimen consisted of the contents of an inguinal hernial sac removed by him at operation ; the diagnosis had been " strangulated inguinal hernia." The specimen proved to consist of a large omental hernia, the tissue of which had become largely of a fibrous nature, and in the centre of the mass was an abscess cavity, the size of a walnut, containing greenish pus. The specimen is now in the laboratory museum.

7. *Banti's disease.*—Another interesting case was seen by courtesy of Dr. du Vergé. This patient, a woman of about 35, came into hospital acutely ill with a very enlarged and tender spleen, and a palpable liver. No malaria parasites were found. The blood shewed little abnormal other than a severe secondary type of anaemia, and a marked leucocytosis. The diagnosis was " enlarged and prolapsed spleen with twisted pedicle " and the organ was successfully removed at operation by Dr. du Vergé in due course. Examination of the spleen at the laboratory shewed that the organ weighed about $3\frac{1}{2}$ pounds ; that the pedicle was greatly elongated and twisted ; that there had been recent haemorrhage from it ; and, in conjunction with the clinical findings, that the original cause of the condition was ascribable to " Banti's disease." This specimen is also in the laboratory museum.

8. *Balantidial dysentery.*—Specimens of dysenteric stool sent by Dr. Dyson from the Mental Hospital were found to contain enormous numbers of that comparatively rare intestinal protozoon *Balantidium coli.* The patient on enquiry turned out to be a Mahommedan, and therefore, presumably, regarded the pig as an unclean animal, and may be assumed to have had, at most, but limited dealings with it. The parasites however definitely belonged to this species and there is no doubt about the diagnosis.

9. *Schistosomal appendicitis.*—Through the kindness of Dr. du Vergé, of Victoria Hospital, Candos, every vermiform appendix removed by him during the course of the year was immediately fixed in formalin ; a short history of the relevant details of the case was appended on an attached label ; and the specimen was submitted to the laboratory, where it was sectioned. The aim of the investigation was to find the incidence of bilharzia infestation of the organs, and to this end 139 appendices from this source were sectioned during

the twelve months under review. Of these 139 organs 9 were found to be heavily infiltrated with terminal-spined eggs. In all 9 of these infected cases there was no previous history of bilharzia, and in 8 of them there was a definite history of "appendicitis," the remaining one being removed during a laparatomy. Bilharzial appendicitis has not received much attention in the literature until the last year or so, and it is therefore all the more interesting to find that 6.4 percent of 139 consecutive appendices removed at operation in Mauritius were found to be infiltrated with the ova of *S. haematobium*.

10. *Post-mortem examinations.*—Four post-mortem examinations were made at the request of the Medical Superintendent of Victoria Hospital on cases in which the cause of death was obscure. The first of these was a case of cerebral abscess, the second a case of cerebral malaria, the third a case presenting the symptoms and signs of encephalitis lethargica, but on section the brain did not shew the characteristic histological picture, and the fourth was a case in which cautery of rectal polypi had been performed, and the patient died suddenly some hours afterwards on the same day. The cause of death was probably shock, as no pathological lesions to account for it could be found post-mortem ; section of neighbouring tissues in the rectal region, and of some of the polypi, shewed that there was a marked acute inflammatory proctitis extending 9" inches from the anus but not due to bilharzial infestation as was at first suspected ; it was probably of bacterial origin. Thorough dissection of the pelvic viscera failed to reveal the presence of Schistosomes in the pelvic sinuses.

11. *Quinine poisoning.*—A rare and unsual case of poisoning by quinine salts was brought to the notice of the police surgeon. A child of about five years of age ate a number of chocolate-coated tablets of quinine hydrochloride, collapsed shortly afterwards, and died within twenty-four hours. It was surmised that a dose of about ninety grains of the drug had been swallowed. Dr. Maingard performed an autopsy and forwarded the kidneys to the laboratory for examination. Nothing abnormal could be detected in these organs.

V.—Research

(*a*) Intestinal Flora and Fauna of the General Population

A certain amount of time was found between routine laboratory duties for investigation into problems of local interest. Among the more important of these may be mentioned the incidence of infestation with pathogenic protozoa, bacteria, and helminths among the general population of the colony. Owing to the situation of the laboratory, and to the many other difficulties presenting themselves in an investigation into the intestinal flora and fauna of a fair sample of the general population of the colony, it was decided that an enquiry of this nature could best be conducted in an institution such as a large prison. By the courtesy of the Inspector General of Police facilities were put at our disposal to make a survey of the intestinal infections of the inmates of Beau Bassin convict prison, and the study, after some preliminary work, was commenced in January and continued without remission until August. Weekly visits were paid to the prison by members of the staff of the laboratory and, by previous arrangement, the stools of a selected number of prisoners were placed, in the buckets in which they had been passed early in the morning, in a fly-proofed room on the pre-arranged day. Each stool was sampled by us personally and the specimen was then removed to the laboratory for further study. By this arrangement no stool was more than two or three hours old when we examined it, and the results of our examinations may be taken as representing a very fair approximation of the original floral and faunal content. Three stools from each prisoner were examined in

every instance recorded, but, in addition, a large additional number were necessarily examined on one or two occasions only owing to the discharge and other movements of prisoners, but these latter are omitted from the figures owing to the unreliability of examinations less than three in number ; many workers, indeed, believe that the number we have adopted is too few ; but we have satisfied ourselves that this number gives a very fair estimate of the incidence of at least the protozoal and helminth infections—a view shared by certain other authors in the literature.

On return to the laboratory each specimen was submitted to a routine procedure, which we had determined by tentative work to provide the information required with the maximum of efficiency and a minimum of wasted effort. The technique adopted was as follows:

(1) A culture was made on a plate of endo medium and incubated for twenty-four hours. Non-lactose-fermenting colonies were then picked off, at least three being selected from each plate ; and the organisms, after isolation in pure culture, were put through the sugar media, the staining reactions were studied, and the characters of motility and morphology determined. On completion of this the organisms were tested against appropriate anti-sera, and their serological and antigenic relationship determined.

(2) A wet film was examined for the presence of protozoa and helminth ova ; and, where necessary, this was elaborated by study of iodine-stained preparations.

(3) A smear was made and wet-fixed in Schaudinn's fluid ; this film was subsequently stained with Heidenhain's Iron-alum-haematoxylin and closely examined. On the study of these films is based the determination of the species of protozoa encountered.

(4) A concentration of helminth ova was made by emulsification of a portion of the stool in concentrated salt solution, and subsequent flotation by centrifugation. The helminth ova were sampled from the surface of the emulsion by removal on small coverslips, the ova being attracted to these and adhering to them by surface tension.

Appended hereto are some tables showing the incidence of the intestinal protozoa and helminths in the various sections of the men and boys examined. The high rates of certain of these parasites are of interest, notably the figures for *Entamoeba histolytica* among both the adults and the juveniles, and for *Trichuris trichiura* and, more particularly, *Ascaris lumbricoides* among the juveniles. As was to be expected representatives of all the intestinal protozoa, with the notable exception of the Coccidia and Ciliates, were recovered from the inmates of the institutions ; the same applies to the helminths, with the noteworthy exception of the Cestode parasites which are rarely seen in Mauritius, as is the case in most parts of the East where vegetable matters form the staple articles of diet. In considering the figures for helminth infestation it must not be overlooked that treatment, in some cases repeated, has probably been given to the individuals studied, and that frequent stool examination over a period before the men are finally committed to the convict prison has been made in each case with object of disinfesting the prisoners of Ascaris and Hookworm infections. The figures for *E. histolytica* likewise are possibly lower than those that would have been obtained if the persons examined had been living a normal free life, as dysenteric affections are most carefully sought for and appropriately treated in order to avoid the epidemics that are so frequent a source of anxiety in institutional life.

Turning to the bacterial infestations we were faced with a number of grave difficulties. 173 strains of non-lactose fermenting organisms were isolated from 534 men and boys, and their biological and bio-chemical characters determined. Of these 173 strains, 118 were identified as being *Bact. enteritidis* (Gaërtner) ; 42 as belonging to the Paratyphoid group of bacilli ; 4 as *Bact.*

typhosum ; 8 as *Bact. flexneri ;* and 1 as *Bact. shigae,* on morphology, staining, and the sugar and other reactions (N. Red, V. P., H_2S., Indol, etc.). When their serological responses were tested, however, a number of anomalies were encountered ; the sera used in these tests were standard agglutinating sera freshly supplied from the Lister Institute ; and a number of the organisms were not agglutinated by the specific, or allied, anti-sera, either to a diagnostic titre, or, indeed, in some cases at all. The position at present as to the definite indentification of the strains is, therefore, unsatisfactory, and to elucidate and clarify the position considerably more work will have to be undertaken. Under the circumstances up to the present this has not been possible, so that the results can not be accepted as being of any conclusive value in the elucidation of the question as to the rates of infestation with the pathogenic intestinal bacteria belonging to the above mentioned groups.

(*b*) BILHARZIA.

As mentioned in the last annual report tentative work was then in progress with the object of determining the local molluscan hosts of the type of bilharzia parasite present in the island. The disease is of the urinary type and diagnosis of its presence has for many years been made by the finding of terminal-spined eggs in the urine of infected persons. Neither the adult worms, nor the larval stages, have ever been seen in Mauritius, and, of course, the molluscan hosts are unknown. A collection of local fresh-water molluscs had been sent home to the British Museum for identification, and during the earlier months of the present year we were indebted for a report on this collection to Major Connolly, together with the return of a representative correctly-named collection of specimens.

The following is a list of the Mauritian fresh-water snails listed and identified by Major Connolly.

GASTROPODA.

Lymnaea mauritiana Morel.
Gyraulus mauritianus Morel.
Physa borbonica Fer.
Bulinus (*Pyrgophysa*) *forskali* (*Ehrn*) (=*cernica* Morel).
Viviparus zonatus (Hanley).
Thiara amarula (Lin.).
Thiara (Plotia) scabra (Mull.) (=*aspersa* Gmel., *spinulosa* Lam., *mauricia* and *doreyana* Less., *elegans* Rve. etc.).
Melanoides tuberculata (Mull.) (=*costata* Schrot., *fasciolata* Olivier, *virgulata* Fer., *rodericensis* Smith, etc., etc.).
Melanoides commersoni Morel.
" *Paludomus punctatus* " Rve.—a doubtful species.
Assiminea nitida Pse.
Assiminea granum Morel.
Truncatella teres Pfr.
Truncatella guerini Villa.
Truncatella ceylanica Pfr.
Truncatella valida Pfr.
Neritina gagates Lam. (=*caffra* Sow., *zigzag* Morel., and *strigilata* Desh).
Neritina modicella Desh.—a doubtful species.
Neritina fulgarata Desh.—a doubtful species.
Neritina longispina Recl.
Neritina longispina Recl. var. *despinosa* Mouss.
Neritina consimilis Mts.
Smaragda viridis (Lin).
Septaria borbonica (Bory).

and a number of PELECYPODA.

Armed with this information serious work was started and representatives of the majority of the species of the Gastropod molluscs were obtained. Those thought to be of most importance from our point of view were snails belonging to the families Lymnaeidae, Physidae, and Planorbidae ; the latter family is divided into two sub-families, the Planorbinae and the Bulininae, both of which contain species proved in the past to act as hosts to the human schistosome parasites ; the local representatives include one genus and a single species in each of these sub-families, *Gyraulus mauritianus* being that belonging to the Planorbinae, and *Bulinus* (*Pyrgophysa*) *forskali* that to the Bulininae. A number of species of snails belonging to the three families mentioned above were exposed to the attack of miracidia freshly-hatched from the terminal-spined eggs passed in the urine of an Indian boy retained for the purpose at the laboratory. The miracidia were observed to attack vigorously *Bulinus* (*Pyrgophysa*) *forskali* and in the presence of these snails neglected the other species. Sections of specimens of this species of snail after half an hour's exposure to infestation showed that the miracidia had gained entrance into them in enormous numbers. Sundry attempts were made to infect representatives of different species of snails on a large scale, but it was found that *forskali* would not live under purely laboratory conditions for more than a week or so after exposure to infestation. After much loss of time over this technical difficulty a rain-water channel running along the side of the laboratory was converted into a canal similar, on a small scale, to the irrigation canals so common a feature of the island. Numbers of snails of various species were introduced into this channel after exposure to infection in the laboratory, and it was found that all, including the *forskali,* thrived under the conditions obtaining in the aqueduct. After a period of thirty-two days a few of each species of snail were removed and dissected. All the *forskali* were found heavily infested with the bifid-tailed cercariae characteristic of the human schistosome worms, while none of the other species of snails had any type of furcocercous cercariae in them. Dissection, during the next two weeks, of about fifty representatives of each species originally introduced into the channel provided like results, a hundred percent of the *forskali* were infested with typical sporocysts containing the characteristic cercariae, while none of the other snails bore any. There is thus *prima facie* evidence, taking into consideration that about thirty *forskali* from the original batch exposed to infection and introduced into the channel were first found to be negative, that these cercariae were derived from miracidia to which the snails were exposed. The final proof rests on the successful infestation of clean laboratory animals, and this stage of the work was in progress at the conclusion of the year. To sum up: the position at present is that, apparently, 100% successful experimental infestation of a snail host has been obtained ; that this snail is *Bulinus* (*Pyrgophysa*) *forskali ;* that no other species has so far been experimentally infected ; and that final proof of the experiments rests on infection of experimental animals in the laboratory, and the eventual recovery and identification of the adult worms from these animals. The chain of evidence in favour of the implication of this particular mollusc is then almost complete. Research in the literature shows that *forskali* has never before been definitely and conclusively implicated as a molluscan host of this parasite ; that the snail is foreign to the fauna of this island but is wide-spread in Africa ; and that it was introduced to Mauritius, in the opinion of a leading malacologist, Dr. L. Germain, in merchandise. It apparently does not occur in the other islands of the Mascareigne group ; and it is a significant fact that in Madagascar another species of schistosomal worm, associated with the rectal

type of bilharazia, is the common disease ; while the urinary type, common here, does not occur there ; the converse is also the case, as no authentic indigenous case of rectal bilharzia, due to *S. mansoni*, has been recorded in Mauritius.

VI.—Medico-Legal Section

(*a*) PUBLIC HEALTH.

The usual specimens of milk and other food-stuffs were sent for analysis by the Medical and Health Department. These included the following, but the list is comparatively short in view of the fact that no whole-time chemist has been available on the laboratory staff for work of this nature.

Milk	386 specimens.
Water	3 specimens.

(*b*) MEDICO-LEGAL.

219 articles of evidence, as listed hereunder, were examined for the police, in cases where they requested assistance ; this work consumes much time and labour in view of the necessity for the very careful and painstaking investigations necessary in medico-legal examinations, and the preparation of a full and carefully-worded report for production in the courts of law.

Murder	52 articles	in 13	cases.
* Wash	40 ,,	24	,,
Rape	38 ,,	9	,,
Gandia	22 ,,	16	,,
Rum	16 ,,	6	,,
Poisoning	11 ,,	4	,,
Wounds and blows ...	8 ,,	2	,,
Sexual intercourse ...	8 ,,	1	,,
Sodomy	5 ,,	1	,,
Attempt on chastity ...	3 ,,	1	,,
Abortion	3 ,,	1	,,
Poisoning of dog ...	4 ,,	1	,,
Poisoning of poultry ...	1 ,,	1	,,
Infanticide ...	1 ,,	1	,,
Debauchery ...	1 ,,	1	,,
Suicide	1 ,,	1	,,
Dough	1 ,,	1	,,
Perfume	1 ,,	1	,,
Whisky	1 ,,	1	,,
Brandy	1 ,,	1	,,
Molasses	1 ,,	1	,,
Total ...	219	88	

* Ordinance 36 of 1904 defines wash as "any fermented liquid prepared for the distillation of spirits, or any liquid undergoing preparation fitting it for distillation"

PUBLICATIONS

The following papers and notes were published, during 1933, by members of the laboratory staff, either alone or in conjunction with other authors in the colony, on material and cases dealt with at the laboratory.

Adams, A. R. D. and Lionnet, E. (1933)—An outbreak of Surra among the Wild Deer (*Cervus unicolor* var.) of Mauritius. Jl. Comp. Path. and Therap. XLVI. 165.

Adams, A. R. D. (1933)—Sprue in Mauritius. Trans. Royal Soc. Trop. Med. and Hyg. XXVII. 199.

Adams, A. R. D. and Webb, L. (1933)—Two further cases of Human Infestation with *Bertiella studeri* (Blanchard, 1891), Stiles and Hassal, 1902, with some observations on the Probable Synonymy of the Specimens Previously Recorded from Man. Ann. Trop. Med. and Parasitol. XXVII. 471.

Adams, A. R. D. and Bouloux, F. (1933)—Sudden death from Pancreatic Haemorrhage. Lancet. CCXXV. 1034 (Nov. 1933).

CONCLUSION

In conclusion I have once more to thank my assistants, and other members of the staff of the laboratory, for their cordial co-operation and loyalty during the year. The results obtained in the small investigations we have been able to undertake, outside the regular routine of a laboratory of this nature, constitute evidence of a tangible nature of the manner in which the personnel of the institution has worked as a whole for the welfare of the laboratory, and for that of the colony at large.

February, 24th, 1934.

A. R. D. ADAMS,
Superintendent
Bacteriological Laboratory.

TABLE I

* TO SHOW THE INCIDENCE OF VARIOUS INTESTINAL PROTOZOA AMONG THE ADULT MALE INMATES OF BEAU BASSIN CONVICT PRISON, AS DETERMINED BY THREE STOOL EXAMINATIONS.

Race	Number examined	*Entamoeba histolytica*	*Entamoeba coli*	Unindentified vegetative entamoebae	*Endolimax nana*	*Iodamoeba butschlii*	*Dientamoeba fragilis*	*Giardia intestinais*	*Trichomonas hominis*	*Chilomastix mesnili*	*No.* Protozoa
Indian ...	... 226	84	73	13	83	26	1	27	9	16	59
		37.2 per cent.	*32.3* per cent.	*5.8* per cent.	*36.7* per cent.	*11.5* per cent.	*0.4* per cent.	*11.9* per cent.	*4.0* per cent.	*7.1* per cent.	*26.1* per cent.
Creole ...	... 193	80	80	13	76	33	2	16	5	12	35
		41.5 per cent.	*41.5* per cent.	*6.7* per cent.	*39.4* per cent.	*17.1* per cent.	*1.0* per cent.	*8.3* per cent.	*2.6* per cent.	*6.2* per cent.	*18.1* per cent.
Chinese ...	... 9	1	2	1	2	1	—	1	—	1	5
Total ...	... 428	165	155	27	161	60	3	44	14	29	99
		38.5 per cent.	*36.2* per cent.	*6.3* per cent.	*37.6* per cent.	*14.0* per cent.	*0.7* per cent.	*10.3* per cent.	*3.3* per cent.	*6.8* per cent.	*23.1* per cent.

* No other protozoa were observed with the exception on rare occasion of some coprozoic amœbae ; coccidial oocysts and the cysts of *Balantidium coli* were notably absent.

TABLE II

* To show the incidence of various intestinal helminths among the adult male inmates of Beau Bassin Convict Prison as determined by three stool examinations.

Race	Number examined	*Trichuris trichiura*	*Ascaris lumbricoides*	*Strongyloides stercoralis*	Hookworm	*Clonorchis sinensis*	No helminths
Indian	... 226	207	36	12	79	0	12
		91.6 per cent.	*15.9* per cent.	*5.3* per cent.	*35.0* per cent.	—	*5.3* per cent.
Creole	... 193	176	32	8	37	0	9
		91.2 per cent.	*16.6* per cent.	*4.2* per cent.	*19.2* per cent.	—	*4.6* per cent.
† Chinese	... 9	7	0	0	0	5	0
Total	... 428	390	68	20	116	5	21
		91.1 per cent.	*15.9* per cent.	4.7 per cent.	27.1 per cent.	1.2 per cent.	4.9 per cent.

* No other helminth ova or larvae were found, with the exception on rare occasions of ova of *Heterodera radicicola (Oxyuris incognita)* ; Cestode segments and ova were notably absent from the stool, as were Schistosome eggs.

† All these men were born and lived in China until adolescense, with one exception. This man, one of those infected with *Clonorchis*, was born in Mauritius but went to China at the age of seven and remained there some years.

TABLE III

* To show the incidence of various intestinal protozoa among the juvenile (10-18 years) male inmates of Beau Bassin Reformatory, as determined by three stool examinations.

Race	Number examined	*Entamoeba histolytica*	*Entamoeba coli*	Unindentified vegetative entamoebae	*Endolimax nana*	*Iodamoeba butschlii*	*Dientamoeba fragilis*	*Giardia intestinalis*	*Trichomonas hominis*	*Chilomastix mesnili*	No. Protozoa
Indian	34	9	7	3	5	2	0	3	0	0	13
		26.5 per cent.	*20.6* per cent.	*8.8* per cent.	*14.7* per cent.	*5.9* per cent.	—	*8.8* per cent.	—	—	*38.2* per cent.
Creole	23	9	10	0	6	1	0	2	0	1	7
		39.1 per cent.	*43.5* per cent.	—	*26.1* per cent.	*4.3* per cent.	—	*8.6* per cent.	—	*4.3* per cent.	*30.4* per cent.
Total	57	18	17	3	11	3	0	5	0	1	20
		31.6 per cent.	*29.8* per cent.	*5.3* per cent.	*19.3* per cent.	*5.3* per cent.	—	*8.8* per cent.	—	*1.8* per cent.	*35.1* per cent.

* No other protozoa observed with the exception on rare occasions of some coprozoic amoebae ; coccidial oocysts and the cysts of *Balantidium coli* were notably absent.

TABLE IV

* To show the incidence of various helminths among the juvenile (10-18 years) inmates of Beau Bassin Reformatory, as determined by three stool examinations.

Race	Number examined	*Trichuris trichiura*	*Ascaris lumbricoides*	*Strongyloides stercoralis*	Hookworm	*Clonorchis sinensis*	No helminths
Indian	34	34	17	0	28	0	0
		100.0 per cent.	*50.0* per cent.	—	*82.4* per cent.	—	—
Creole	23	23	19	2	20	0	0
		100.0 per cent.	*82.6* per cent.	*8.7* per cent.	*87.0* per cent.	—	—
Total	57	57	36	2	48	0	0
		100.0 per cent.	*63.2* per cent.	*3.6* per cent.	*84.2* per cent.	—	—

* No other helminth ova or larvae were found, with the exception on rare occasions of ova of *Heterodera radicicola* (*Oxyuris incognita*) ; Cestode segments and ova were notably absent from the stools, as were Schistosome eggs.

APPENDIX II

Annual Report of the Hookworm Branch for the Year 1933

ORGANIZATION AND STAFF

Since the beginning of this year, Dr. A. C. d'Arifat having been appointed Deputy-Director, the present acting Medical Officer has been in charge of the Branch.

EXTENT OF OPERATIONS

There are but three methods of combating the disease, namely :

i. SOIL SANITATION.
ii. EDUCATION.
iii. TREATMENT.

Soil sanitation being in the meantime outside the province of this Branch, the aim has been to give mass Treatment to as large a proportion of the population as possible.

The following Districts were chosen for the purpose :
Grand Port, Savane, Plaines Wilhems, and, if time allowed, Moka and Black River.

It was soon realized that in these districts, with the exception of Black River, educational work had been so thoroughly carried out in the past, that the most ignorant were conversant with the main symptoms and mode of transmission of the disease, and that the majority of the Estate Managers were so keen on the treatment of their labourers that they were ready to retribute them for treatment-days as if they had been working.

The survey made in 1928-1930 showed that the percentage of Hookworm infection in these districts was then :

Black River	:	77%.
Grand Port	:	84%.
Moka	:	92%.
Plaines Wilhems	:	79%.
Savane	:	85%.

There is no reason to believe that these percentages have changed, but the heaviness of infection in individual patients has greatly diminished in Plaines Wilhems and has become appreciably less in Savane, Grand Port and Moka, so that persons disabled by the disease are now rarely seen.

The number of treatments obtained : 64,283, comparing favourably as it does with the figures for preceding years, as shown below, is only the result of a continued progress :

1929	...	...	... 34,192
1930	...	...	... 30,916
1931	...	...	... 38,925
1932	...	...	... 52,663
1933	...	...	... 64,283

This progress, the result of the familiarity of the population with the disease and with the benefit accruing from treatment, stands to the credit of my predecessor.

CONCLUSION

The number of treatments, as far as can be obtained in one year by a single organization, may be said to be approaching its acme. There was no time to be given to districts other than those treated. The Estate Managers and the general population of the Southern and Central Districts appreciate the benefits to be derived from the treatment and insist on this being repeated yearly ; and it seems that, if the amelioration attained is to be permanent, this must be done.

It may be pointed out that the Northern Districts, meanwhile, where Hookworm disease is as rife as in the rest of the Island, have had no treatment since 1927. The further development of this Campaign lies in the creation of a second Hookworm Organization for the northern half of the Island, the need for this has become urgent.

11th January, 1934.
Curepipe Road.

LEWIS J. McGREGOR,
Medical Officer in charge Hookworm-Malaria Branch.

HOOKWORM CAMPAIGN WORK FOR THE YEAR 1933

CLASSIFICATION BY AGE

	Census	0-5 Examined	0-5 Infected	6-10 Examined	6-10 Infected	11-20 Examined	11-20 Infected	21-30 Examined	21-30 Infected	31-40 Examined	31-40 Infected	41-50 Examined	41-50 Infected	51-60 Examined	51-60 Infected	over 60 Examined	over 60 Infected	Total Examined	Total Infected	%Infection
Central Dispensary	6,187	422	62	333	87	241	89	195	63	120	31	73	24	33	14	11	1	1,428	371	25.9
Grand Port ...	53	5	0	16	3	28	1	2	1	1	0	1	0	—	—	—	—	53	5	9.4*
Plaines Wilhems ...	339	4	1	109	58	72	46	—	—	—	—	—	—	—	—	—	—	185	105	56.7†
Total	6,579	431	63	458	148	341	136	197	64	121	31	74	24	33	14	11	1	1,666	481	28.8

CLASSIFICATION BY RACE

	Mixed Examined	Mixed Infected	Indian Examined	Indian Infected	Chinese Examined	Chinese Infected	White Examined	White Infected
Ctl. Dispensary	649	157	460	174	13	2	306	38
Black River	—	—	—	—	—	—	—	—
Grand Port	23	2	30	3	—	—	—	—
Moka ...	—	—	—	—	—	—	—	—
Plaines Wilhems	37	16	148	89	—	—	—	—
Savane ...	—	—	—	—	—	—	—	—
Total ...	709	175	638	266	13	2	306	38

OTHER HELMINTHS

	Ascaris	Tricho	Strongy	Oxyuris	Taenia
Ctl. Dispensary	551	879	—	38	2
Black River	—	—	—	—	—
Grand Port	33	45	—	—	—
Moka ...	—	—	—	—	—
Plaines Wilhems	127	43	—	2	—
Savane ...	—	—	—	—	—
Total ...	711	967	—	40	2

TREATMENTS

	First	Second	Third	Fourth	Total
Ctl. Dispensary	5,028	1,865	633	445	7,971
Black River	250	59	—	—	309
Grand Port	9,845	2,782	752	71	13,450
Moka ...	7,089	1,302	43	—	8,434
Plaines Wilhems	13,737	2,633	167	—	16,537
Savane ...	11,934	4,402	1,177	69	17,582
Total ...	47,883	13,043	2,772	585	64,283

RE-EXAMINATION AFTER TREATMENT

	1 Positive	1 Negative	2 Positive	2 Negative	3 Positive	3 Negative	4 Positive	4 Negative	Total Positive	Total Negative
Ctl. Dispensary	1	5	5	16	3	17	20	98	29	136
Black River	—	—	—	—	—	—	—	—	—	—
Grand Port	—	—	—	—	—	—	—	—	—	—
Moka ...	—	—	—	—	—	—	—	—	—	—
Plaines Wilhems	—	—	—	—	—	—	—	—	—	—
Savane ...	—	—	—	—	—	—	—	—	—	—
Total ...	1	5	5	16	3	17	20	98	29	136

* Rose Belle Girls' Orphanage.

† Curepipe Boys' Government School.

APPENDIX III

Annual Report of the Malaria Branch for the Year 1933

STAFF

Since the beginning of the year, Dr. A. C. d'Arifat has been appointed Deputy-Director and the Branch has been entrusted to the present acting Medical Officer ; no other change has been made in the staff.

WORK DONE

The Branch is concerned with the Anti-malarial Campaign in the Mac Gregor zone, which is that part of the Island limited by the 600 ft. altitude line, consisting mainly of the districts of Plaines Wilhems and Moka. The work done can be described under three heads :

i. Maintenance.

ii. Survey.

iii. Antimalarial Works.

Maintenance.

About 701,300 feet (about 133 miles) of rivers and drains worked in the past in the zone have been kept in a clean condition. Whenever cantonniers have neglected their work, they have been fined or dismissed.

Survey.

(i) Survey of Curepipe.

As planned by Dr. d'Arifat, a survey of Curepipe was started this year. The town was divided into 4 blocks extending to a one mile radius and a moustiquier in each block was ordered to search his block systematically and thoroughly for :

(*a*) anopheline breeding places ;

(*b*) potential breeding places.

The findings for the town and its immediate neighbourhood were :

Breeding Places

Quarter		natural		artificial		Total	Anopheles		
		Major	Minor	Major	Minor		C.	F.	M.
January—March	...	2	1	2	5	10	9	0	1
April—June	...	0	0	0	1	1	1	0	0
July—September	...	0	0	0	1	1	0	1	0
October—December		1	0	0	0	1	0	1	1
Total	...	3	1	2	7	13	10	2	2

C = Anopheles costalis ; F = Anopheles funestus ; M = Anopheles maculipalpis.

Numerous potential breeding places were discovered, noted and kept under careful observation.

With a view to discovering locally contracted cases of Malaria in Curepipe, blood films were taken at four schools in or about the town and all persons coming to the Central Hookworm Dispensary and complaining of fever were submitted to blood examination. Some blood-films were also sent by Dr. E. Harel.

QUARTER	LOCALITY	No. of blood films	No. of B. films positive	Contracted in Curepipe	B.	M.	Q.
January—March	*Eau Coulée*						
	R. C. School ...	120	6	3	3	—	—
	Dispensary ...	111	61	21	16	3	2
April—June	*Curepipe*						
	Girls' Govt. School ...	100	3	0	—	—	—
	Dispensary ...	61	38	7	7	—	—
July—September	*Curepipe*						
	Boys' Govt. School ...	100	3	0	—	—	—
	Dispensary ...	42	18	0	—	—	—
October—December	*Le Mesnil*						
	Boys' School ...	116	3	0	—	—	—
	Dispensary ...	84	31	1	—	—	—
	Total ...	734	163	32	26	3	2

B = Benign tertian ; M = Malignant tertian ; Q = Quartan.

There is a noticeable correspondence between the anopheline prevalence and the number of cases of malaria contracted in Curepipe, the cases continuing for some time after the anophelism and disappearing when anophelism is at a low level as is to be expected. Few anopheline breeding places were discovered after March and no locally contracted cases after April, apart from the case of Quartan fever in December, which is a doubtful one.

It seems, therefore, that the town was free from malaria for eight months. This is encouraging, since, in 1932, the disease was prevalent for the best part of the year. The winter this year has been cool and very dry, while, in 1932, the effects of the hurricane of 1931 were still being felt. At the same time, since Anopheles funestus larvae have been found in September and in November in Curepipe, there is no ground for undue optimism and there is reason to prolong this survey for some years before definite conclusions are arrived at as regards the aptitude of dangerous anophelines to breed in the town under normal conditions.

(ii) SURVEY IN THE MACGREGOR ZONE OUTSIDE CUREPIPE.

This was continued with a reduced number of moustiquiers, since four of them were engaged in the survey of Curepipe. In the rest of Plaines Wilhems and Moka the following breeding places were found.

QUARTER	BREEDING PLACES: NATURAL Major	NATURAL Minor	ARTIFICIAL Major	ARTIFICIAL Minor	TOTAL	ANOPHELES C.	ANOPHELES F.	ANOPHELES M.
January—March ...	1	1	2	7	11	7	4	0
April—June ...	0	1	2	12	15	12	3	0
July—September ...	0	0	0	5	5	4	0	1
October—December ...	0	0	0	9	9	3	6	1
Total ...	1	2	4	33	40	26	13	2

For the whole zone, including Curepipe, therefore, we find :

Natural breeding places :	major	...	4
Natural breeding places :	minor	...	3
Artificial breeding places :	major	...	6
Artificial breeding places :	minor	...	40
	Total	...	53

The great preponderance of minor breeding places and of Anopheles costalis is apparent.

The 40 minor artificial breeding places may be classed under the following categories :

1. Artificial pools including barrels, drums, cauldrons, watering pools (ground tanks), concrete or iron tanks, small ornamental ponds, artificial cress pools, etc.	20
2. Holes dug in the ground for clay, etc.	2
3. Water in or about manure	4
4. Street gutters and drains	7
5. Public Fountains	2
6. Mill streams and Estate canals	4
7. Leaking pipes	1
Total	40

So that the artificial pool or tank type of nuisance accounted for exactly 50% of minor breeding places and for about 38% of all breeding places during the year.

ANTIMALARIAL MEASURES

Minor : All minor breeding places have been cleaned and oiled, and several of them have been destroyed. Some have been used as traps for one to three months as it was found that their immediate destruction resulted in breeding in some other nearby water nuisance, and the number of minor potential breeding places, especially in Lower Plaines Wilhems, is simply appalling. In order to get rid of this multitude of nuisances, it is my opinion that all such collections of water should be forbidden, and, if deemed necessary, registered at the Office of the Malaria Branch, so that they may be regularly inspected, the Medical Officer to have the right to order the destruction of any that are found containing larvae whether anopheline or other. The Malaria and Sanitary Staff cannot suffice to control these at present and, unless some drastic measures are taken, all the work done up to now will come to nothing on account of these minor nuisances.

Major : Works in the following places have been carried out :

1. La Louise drains : reconstruction begun in 1932 have been completed.

2. Grotte Bonnefin : Extensive marshes, where A. costalis had been found breeding, were drained and all depressions filled in. Two central drains and numerous subsoil drains were constructed for the purpose.

3. Tatamaka River and Camp Caval drains : These have been regraded, the majority of the smaller drains being converted into subsoil drains.

4. Junction of Rivière Sèche and Rivière Plaines Wilhems at Trianon : The eroded banks have been reclaimed and the boulders obstructing these rivers in their beds removed.

5. Rivière Cascade, Réduit : The rock pools which used to breed numerous larvae have been drained by cutting channels in the rock.

The policy has been to make subsoil drains wherever possible because subsoil drains resist floods better and save maintenance.

In future, the Plaines Wilhems gang will be occupied in or about Curepipe, and works or repairs in the rest of the zones will be carried out by the Moka gang.

26th January, 1934.
Curepipe Road.

LEWIS J. McGREGOR,
Medical Officer in charge Hookworm-Malaria Branch.

APPENDIX IV

Annual Report of the Medical Officer of Health, Port Louis, for the Year 1933.

ADMINISTRATION

The Sanitary Staff was composed of three Inspectors and two Guards. The Inspector in charge of the section which includes the Docks and Wharves has the additional duty of supervising the sanitary measures imposed on the incoming ships.

PUBLIC HEALTH

No epidemic was recorded during the year. On the 28th February Bacillary Dysentery ceased to be notifiable.

The number of cases notified amounted to eight.

VITAL STATISTICS

The area of Port Louis is about sixteen square miles. The estimated population was 54,143 on the 1st of January and 54,459 on the 31st of December. The estimated population on the same dates in 1932 was 54,290 and 54,143.

BIRTHS

Year	Total	Birth-rate per 1,000 population	Still Births
1932 ...	1,586 ...	29.2 ...	137
1933 ...	2.019 ...	37.2 ...	190

DEATHS

Year	Intra Urban	Extra Urban	Total	Crude death-rate per 1,000 population
1932 ...	1,520 ...	308 ...	1,828 ...	33.6
1933 ...	1,320 ...	200 ...	1,520 ...	28.0

INFANTILE MORTALITY

Year	Under one year	Between the age of one and five	Infantile mortality rate
1932 ...	251 ...	195 ...	160
1933 ...	270 ...	112 ...	138.5

Year	1925	1926	1927	1928	1929	1930	1931	1932	1933
Crude death-rate ...	26.1	28	27.7	32.1	35	43.3	38.5	33.6	28
Birth rate ...	42	39.5	36	38.4	35.6	35.5	32.8	29.2	37.2

COMMUNICABLE DISEASES

MALARIA

The number of reported deaths from Malaria and Malarial Cachexia was 149 as against 239 in 1932 and 323 in 1931, a decrease of 90 on 1932, and 174 on 1931.

The total number of patients treated at the Civil Hospital was 1,032 as against 1,156 in 1932 and 1,441 in 1931.

The case mortality was 6.9% for 1933, 4.4% for 1932 and 3.46% for 1931.

PLAGUE

No sign of human or rodent plague has been detected since 1927.

FILARIASIS

14 cases were diagnosed at the Civil Hospital and Government Dispensaries,

INFECTIOUS DISEASES

Disease	*Cases*
Diphtheria	5
Enteric fever	7
Erysipelas	22
Puerperal Sepsis	13
Dysentery	8
Cerebrospinal fever	1

HYGIENE AND SANITATION

PLAGUE

(*a*) *Rat-proofing :* 145 dwellings, 28 godowns, 19 verandahs and 8 shops were made ratproof.

(*b*) *Rat Surveillance :* Sanitary surveillance over the rodent population in the docks and the surrounding town area was pursued during the year. The rats caught or found dead are examined microscopically.

Rats caught	10,540
Flea rate per rat	2.14
Gravid female rats caught	366
Number of young recovered	1,534
Fecundity index	4.16

(*c*) *Port Sanitary Measures :* On the arrival of healthy vessels from plague-infected ports, the luggage of passengers is disinfected at the Harbour Disinfectng Station and all cargo except flour fumigated by means of the Clayton apparatus in the ship's holds prior to unloading.

(*d*) *Rat-proof Granary :* The Granary was completed in January, 1932, and the first cargo of rice from India was stored there on the 21st September of the same year. On the 7th of April, 1933, the Granary Ordinance, 1933, was voted by the Council of Government to " provide for the fumigation, disinfection and landing of certain grain and the storing thereof in a granary.

Article 6 enacts that....." It shall not be lawful on or after the 1st of July, 1933, to store, keep or possess grain on any premisses other than the granary in any quantities exceeding at a time thirty bags, if the premises are within the limits of the Town and district of Port Louis or seventy bags if the premises are outside these limits."

Unfortunately owing to unforeseen circumstances, the Ordinance was not enforced and practically all the wholesale traders of Port Louis kept a large stock of grain in their godowns or warehouses throughout the year.

Malaria.

In the urban area of Port Louis the anopheline breeding places are practically limited to the small ponds of clear stagnant water on the sides of the streams which cross the town. These ponds caused by the scouring action of heavy rains were immediately filled and, in no such case, could the larvae detected reach the adult stage.

The intra-urban portion of Pouce stream which had been wrecked over a length of about 760 feet by the floods of December 1929, was completely repaired and the concrete platform near Junction Road rebuilt without extra cost to Government. An important malarial nuisance has thus disappeared.

In the extra-urban area, the campaign against malaria is more difficult, and only palliative measures, such as oiling, keeping the streams free from vegetation and trimming the banks are available.

The number of breeding places treated during the year in the district of Port Louis was as follows :

Anopheline.

A. costalis	221
A. maculipalpis	21
A. funestus	—
A. mauritianus	—

Culicini.

Stegomyia	6
Culex	199
L. tigripes	—

GENERAL MEASURES OF SANITATION

Night Soil and Conservancy System

Sewerage : 327 more premises were connected with the sewerage system, this leading to the abolition of 384 pail services.

Pail Latrines : At the end of the year there were still 943 pail services in the urban area and 105 in the extra-urban area.

The night soil buckets are collected in special motor lorries supplied by a Contractor and the contents disposed of at the Cassis and Paul and Virginie tipping chambers.

Pit Latrines : In Cassis, Roche Bois and Sainte Croix pit latrines are made use of for the disposal of excreta.

Collection and Disposal of Refuse

This work performed by the Sanitary Department was quite satisfactory. The refuse is collected daily in motor lorries belonging to Government and is used for the filling in of quarries at Roche Bois and Plaine Lauzun.

The Staff consists of one Dump Overseer, seven Sectional Overseers and 143 labourers.

Water Supply

There are four sources of water supply in Port Louis i.e.

1*a*. Grand River North West : at a dam called " La Digue " where the water is conveyed by two water mains known as the Municipal (18 inch. pipe) and Rectification (19 inch. pipe) Canals to the Pailles filter beds. The filtered water is then chlorinated by means of a Patterson's chloronome and stored in the Monneron and Signal Mountain reservoirs. This chlorinated water supply is limited to the intra urban area and is supplied to shipping.

1*b*. Grand River North West : At a spot nearer to the sea than " La Digue " where Dayot canal starts. This supplies water to Cassis District and ends at Redoute Street. The remaining portion up to Pouce Street is dry.

2. Calebasses River : The water inmpounded by a dam near Bois Marchand Cemetery is brought to the Abattoir, Ste. Croix, Terre Rouge and part of Roche Bois.

3. Latanniers stream : Water is supplied to Vallée des Prêtres by a pipe which is fed by a dam close to the river source.

4. Mare aux Vacoas : This water supply reaches Port Louis through an eight inch diameter piping from a Reservoir at Petite Rivière and renders available a distribution of approximately one million gallons per 24 hours in the town area. It is also supplied to shipping.

Grand River North West and Mare aux Vacoas are now constant water supplies throughout the day.

MARKET

The three markets of the town are under the direct supervision of the Municipality. They have now fallen into a state of disrepair and are no longer fly-proof.

SLAUGHTER-HOUSE

The slaughter house at Roche Bois is managed by the Municipality, and all carcases are examined by a Veterinary Surgeon.

CEMETERIES

Two of the three cemeteries belong to the Municipal Corporation ; a third, the Chinese Cemetery, is under the control of the Sanitary Department.

MILK SUPPLY

The control of milk was conducted by Sanitary Inspectors Louis and Tanguy working conjointly.

The following is a summary of the action taken in this connection.

No. of milk sellers whose milk was tested	378	
No. of samples tested	36	
No. of samples found genuine	1	
No. of samples found to be sophisticated	33	
No. of samples altered	2	
No. of contraventions established	33	
No. of convictions	13	
Imprisonment	2	
Length of time	5	Months

27th March, 1934.

L. M. J. R. PILOT,
M.B., B.S., (Lond.) D.T.M. & H. (Lond.)
Medical Officer of Health, Port Louis and Port Health Officer.

APPENDIX V

Report on the Mental Hospital for the Year 1933.

The total number of certified insane persons in the Colony on 31st December, 1933 was 895 compared with 855 on 31st December, 1932.

2. The following table shows the distribution of the 895 certified insane persons in the Colony on 31st December, 1933 :

	General			Indian			Chinese			Total
	M.	F.	T.	M.	F.	T.	M.	F.	T.	
At Mental Hospital ...	184	178	362	172	111	283	16	1	17	662
On probation leave ...	46	53	99	67	40	107	1	—	1	207
On leave under G. N. No. 239/24	11	4	15	8	3	11	—	—	—	26
Total ...	241	235	476	247	154	401	17	1	18	895

3. The percentage sex-distribution of the 895 certified insane persons was males 56.42 and females 43.58, compared with males 50.77 and females 49.23 for the estimated population of the Island on 31st December, 1933.

4. The following table gives the insane-rates per 10,000 of the population of the island, calculated on the number of certified insane persons in the Colony on 31st December, 1933:

	M.	F.	T.
General population (including Chinese) ...	41.4	36.3	38.8
Indian population	18.1	12.0	15.5
Total population	25.4	20.2	22.9

The above table shows that insanity is more prevalent among males than females. The total insane-rate for the "General" population is more than twice that for Indians and is approximately the British rate of 37 per 10,000.

5. The following table gives the estimated population of the Island on December 31st of the years 1924 to 1933 ; also the total number of certified insane persons and the total insane-rate per 10,000 of the population of the Island for these years:

Years.	Population of Colony on December 31st.	Total certified insane on December 31st.	Insane-rate per 10,000 of population.
1924	387,743	686	17.6
1925	393,708	700	17.7
1926	398,236	719	18.0
1927	401,693	729	18.1
1928	404,802	748	18.4
1929	405,549	759	18.7
1930	404,458	833	20.5
1931	391,044	834	21.3
1932	388,400	855	22.0
1933	390,697	895	22.9

The above table shows a sharp rise in the incidence of insanity within recent years. It is probable that with the return of prosperity to the Colony and the consequent disappearance or mitigation of such adverse factors as increased worry, privation, unemployment and greater prevalence of bodily sickness, the insane-rate will show a corresponding improvement.

6. Hospital Population.

There were 665 persons in hospital (males 374, females 291) on 31st December, 1933. Of these, 2 males and 1 female were under interim detention pending a decision as to their mental state, so that the total number of certified insane persons in hospital on the above date was 662 (males 372, females 290), compared with 662 (males 377, females 285) on 31st December, 1932.

Included in the 662 certified insane were 12 male and 18 female paying patients.

The daily average number resident was 690 (males 394, females 296) compared with 681 for 1932, 680 for 1931, 654 for 1930, 619 for 1929, 612 for 1928 and 1927 and 582 for 1926.

The maximum daily number resident during the year was 706 (males 404, females 302) compared with 705 (males 401, females 304) in 1932.

7. Criminal Mental Patients.

	M.	F.	T.
In hospital on 31st December, 1932	16	1	17
Admitted during 1933	—	—	—
Readmitted from probation leave	4	—	4
Discharged or dealt with under Art. 60 of Ord. 23/1906	2	1	3
Died during 1933	1	—	1
Remaining on 31st December, 1933	17	—	17

8. The following table shows the duration in hospital to 31.12.33 of the 662 certified resident patients:

	M.	F.	T.
One year or less	58	47	105
Between 1 and 2 years	19	26	45
Between 2 and 3 years	25	21	46
Between 3 and 4 years	18	23	41
Between 4 and 5 years	27	10	37
Between 5 and 6 years	20	15	35
Between 6 and 7 years	15	12	27
Between 7 and 8 years	18	10	28
Between 8 and 9 years	23	7	30
Between 9 and 10 years	16	9	25
Between 10 and 15 years	47	27	74
Between 15 and 20 years	23	42	65
Between 20 and 25 years	23	16	39
Between 25 and 30 years	22	11	33
Over 30 years	18	14	32
Total ...	372	290	662

It will be seen from the above table that more than half of the total number of patients have been in hospital 5 years or more, the prognosis in the majority of these cases being hopeless.

9. ADMISSIONS.

	1932			1933		
	M.	F.	T.	M.	F.	T.
1st admissions, certified patients ...	54	56	110	62	46	108
2nd admissions, certified patients ...	8	5	13	10	5	15
3rd admissions, certified patients ...	2	—	2	3	2	5
Readmissions from probation leave ...	36	25	61	32	30	62
Readmissions from leave under G.N. 239/24	31	57	88	43	34	77
Admitted under interim detention later found not to be proper persons to be kept in hospital and accordingly released ...	25	24	49	27	14	41
Admitted under interim detention but not certified or released on 31.12.33. ...	6	—	6	2	1	3
Admitted under interim detention and died whilst so detained	2	1	3	1	2	3
Readmitted after escape	3	—	3	1	—	1
Readmitted from Civil or Victoria Hospitals	2	1	3	2	—	2
Total ...	169	169	338	183	134	317

The above table shows that in 1933 a total of 128 patients (males 75, females 53) were admitted into the Mental Hospital as certified insane (1st, 2nd, 3rd admissions) and are hereunder referred to as direct admissions.

10. Table showing the districts whence came the 128 direct admissions and the insane-rate per 10,000 of population of such districts :

Districts.	No. of direct admissions.	Estimated population of districts on 31st December 1933.	Insane rate per 10,000 of population.
Port Louis	33	54,459	6.0
Plaines Wilhems ...	41	98,113	4.1
Grand Port ...	17	47,451	3.5
Moka	10	29,297	3.4
Pamplemousses ...	8	35,510	2.2
Savanne	6	30,139	1.9
Black River ...	2	13,479	1.4
Flacq	7	51,330	1.3
Rivière du Rempart ...	2	30,919	0.6
Total ...	126	390,697	3.2
Rodrigues ...	2	—	—

The above table shows that the incidence of insanity is much lower in the agricultural districts as compared with the urban district of Port Louis.

11. The following table shows the probable causes of insanity in the case of the 128 direct admissions :

CAUSES	M.	F.	T.
Insane heredity	18	12	30
Feeblemindedness	1	1	2
Puberty and adolescence ...	—	1	1
Climacteric	—	2	2
Senility	1	4	5
Pregnancy	—	1	1
Puerperium	—	6	6
Lactation	—	3	3
Mental Stress: sudden ...	3	6	9
Mental Stress: prolonged ...	14	11	25
Privation and malnutrition ...	1	1	2
Head injury	1	1	2
Epilepsy	9	4	13
Convulsions	2	2	4
Meningitis	1	—	1
Syphilis	12	3	15
Drugs, gandia, opium, cocaine, etc.	—	—	—
Alcohol	4	—	4
Malaria	3	1	4
Hookworm	4	0	4
Leprosy	1	—	1
Pneumonia	1	—	1
Enteric fever	2	—	2
Arteriosclerosis	—	2	2
Exophthalmic goitre	—	1	1

In examining the above table it should be borne in mind that one or more of the causes enumerated therein may be responsible for the production of the mental illness, hence the excess of the aggregate of such causes over the number of patients considered. Heredity, mental stress, syphilis, epilepsy, alcohol are, as usual, prominent etiological factors.

12. DISCHARGES.

The total number of discharges during the year was 279 as against 270 for 1932.

The following table shows the classification of discharges for 1932 and 1933:

	1932			1933		
	M.	F.	T.	M.	F.	T.
Discharged recovered ...	1	1	2	1	3	4
Discharged relieved	59	56	115	75	62	137
Discharged not improved ...	2	7	9	—	4	4
Discharged on leave under G.N. 239/24	29	59	88	56	34	90
Alleged mental patients found sane and released	25	24	49	27	14	41
Transferred to Civil or Victoria Hospital	3	2	5	1	1	2
Transferred to Leper Asylum ...	—	—	—	1	—	1
Escaped	2	—	2	—	—	—
Total ...	121	149	270	161	118	279

The percentage of discharges (recovered, relieved and not improved) to admissions (direct admissions plus readmissions from probation) was 76.3 (males 71.0, females 83.1) compared with 67.7 (males 62.0, females 74.4) for 1932.

During the year 40 patients (males 22, females 18), out on probation leave, were found cured and finally discharged.

13. Deaths.

During the year there were 35 deaths (males 24, females 11), as against 49 in 1932. Of these 7 took place within one month of the patients' admission at the Mental Hospital and were mainly due to their poor state of health.

The death-rate, calculated on the daily average number of patients resident, was 5.07%, (males 6.09%, females 3.71%) compared with with 7.20% (males 8.03%, females 6.12%) for 1932.

The following table gives the causes of death and the number of deaths from each cause:

Causes	M.	F.	T.
Nephritis and uraemia	4	1	5
Acute enteritis	3	2	5
Senile debility	3	1	4
Broncho-pneumonia	2	2	4
Phthisis	3	1	4
Epilepsy	3	—	3
Ankylostomiasis	1	—	1
Cerebral thrombosis	—	1	1
Cerebral haemorrhage	—	1	1
Enteric fever	1	—	1
Dysentery	1	—	1
General paralysis of the insane	1	—	1
Pelvi-rectal abscess and toxaemia	—	1	1
Lobar pneumonia	1	—	1
Tuberculous peritonitis	—	1	1
Carcinoma of floor of mouth	1	—	1
Total ...	24	11	35

8 postmortem examinations were made, giving a percentage of 22.8 of total deaths.

14. Prevalence of Sickness.

The following table gives the number of cases treated in both infirmaries, the daily average of sick and the sick-rate for the years 1932, 1933:

	1932			1933		
	M.	F.	T.	M.	F.	T.
Number of cases treated in infirmaries	318	205	523	223	88	311
Daily average of sick in infirmaries	8.27	6.14	14.41	5.85	3.13	8.98
Sick-rate per cent calculated on daily average number of patients in hospital	2.13	2.08	2.11	1.48	1.05	1.30

15. Table of monthly admissions into the two infirmaries, total stay therein and average stay per patient for the years 1932, 1933:

	1932				1933		
	M.	F.	T.		M.	F.	T.
January ...	43	42	85	January ...	20	3	23
February ...	85	82	167	February ...	16	11	27
March	48	14	62	March ...	21	4	25
April	16	9	25	April	21	12	33
May	20	7	27	May	38	4	42
June	13	5	18	June	16	10	26
July	25	11	36	July	15	7	22
August ...	12	13	25	August ...	13	8	21
September ...	19	5	24	September ...	13	12	25
October ...	8	8	16	October ...	16	3	19
November ...	20	3	23	November ...	17	6	23
December ...	9	6	15	December ...	17	8	25
Total ...	318	205	523	Total ...	223	88	311
Total stay in days	3,029	2,248	5,277	Total stay in days	2,137	1,144	3,281
Average stay per patient ...	9.52	10.96	10.08	Average stay per patient ...	9.58	13.0	10.54

The above table shows that physical diseases during the year were less prevalent than in 1932.

16. The following table shows the monthly admissions in both Infirmaries for the commoner diseases.

Diseases	January	February	March	April	May	June	July	August	September	October	November	December	Total
Influenza ...	1	2	3	2	26	4	1	1	—	4	2	—	46
Malaria ...	3	9	6	9	3	1	1	—	2	—	1	2	37
Epilepsy ...	—	—	2	7	1	2	1	3	3	3	3	3	28
Abscess ...	—	2	—	—	3	2	—	—	1	—	3	1	12
Hookworm ...	3	—	1	4	—	1	1	—	3	2	2	—	17
Boils ...	—	—	—	—	—	1	2	—	1	1	2	3	10
Ulcers ...	—	—	—	—	1	3	—	—	2	2	1	—	9
Dysentery—amoebic ...	—	—	2	—	—	1	3	—	—	—	—	—	6
Dysentery—other types ...	—	2	4	1	—	—	—	—	—	—	—	1	8
Cellulitis ...	1	1	1	—	1	1	—	1	—	1	—	—	7
Chronic bronchitis ...	—	—	—	1	—	—	4	1	—	—	—	—	6
Phthisis ...	—	—	—	—	—	1	1	2	—	1	—	1	6

17. INFECTIOUS AND ALLIED DISEASES.

There were 14 cases of dysentery, 6 of which were of the amoebic type. There were no cases of bacillary dysentery. Influenza cases numbered 46 as against 183 in 1932. Malaria accounted for 37 cases as against 68 in 1932.

During the year 6 cases of phthisis needed active treatment 4 of whom died. There was only one case of enteric fever during the year and this proved fatal. The patient was probably infected by food supplied by a visitor. No patient suffered from the exanthemata.

18. VIOLENCE, ESCAPES ETC.

There were no cases of suicide or homicide.

No patients escaped during the year.

The number of cases of injury to patients was as follows:

Self-inflicted	8
Inflicted by attendants ...	—
Inflicted by patients	76
Accidental	99

The above injuries were of a trivial nature except:

(i) a simple fracture of the proximal phalanx of the left ring finger caused by a patient twisting that digit ;

(ii) a dislocation of the right shoulder probably through an accidental fall. The exact circumstances in which the injury occurred could not be found out ;

(iii) a compound fracture of the proximal phalanx of the right index finger caused accidentally by the fall of a pipe.

On nine occasions members of the staff were injured by patients but in no case was the injury of a serious nature.

19. Table showing the classification of the certified patients in hospital on 31st December, 1933, according to the type of mental disease :

TYPES OF MENTAL DISEASE.	M.	F.	T.
Primary dementia	66	26	92
Senile dementia	8	6	14
Terminal dementia	124	105	229
Amentia with Epilepsy	16	13	29
Amentia without Epilepsy	20	13	33
Mania, recent	18	25	43
Mania, recurrent	8	9	17
Mania, chronic	4	10	14
Mania, acute delirious	—	—	—
Melancholia, recent	20	18	38
Melancholia, recurrent	1	—	1
Melancholia, chronic	9	5	14
Alternating insanity	8	5	13
Paranoia	4	1	5
Paraphrenia	10	11	21
Non-systematised delusional insanity	7	8	15
Acute confusional insanity	2	3	5
Epileptic insanity	35	29	64
General paralysis of the Insane	5	1	6
Moral insanity	4	1	5
Insanity with gross brain lesions	2	1	3
Undiagnosed	1	—	1
Total ...	372	290	662

20. OCCUPATIONAL TREATMENT.

During the year a daily average of 48 male patients, mostly Indians, attended to the vegetable gardens. All the laundry-work of the Hospital was done by the female patients and this, together with ward-work, darning, the

upkeep of the hospital grounds and piggery, mattress-making, carpentry and the manufacture of the hospital tin-ware gave employment daily to an average of 208 male and 118 female patients.

The estimated value of the work done by patients during the year, including institution garden produce, was Rs. 17,121.42 compared with Rs. 15,488.11 for 1932.

21. RESTRAINT AND SECLUSION.

During the year mechanical restraint—strait-jacket—was resorted to in the case of 9 males and 2 females and seclusion in the case of 7 males and 1 female.

The greatest duration, in any single instance, for mechanical restraint or seclusion was 10 hours.

22. RECREATION.

During 1933 the Police Band played twelve times at the hospital. Eleven cinema performances (silent films) were given as well as one "talkie." The latter was a free show given by Messrs. Atkinson and Willis of Allied Cinemas (Pathé), to whom our cordial thanks are tendered. This "talkie," the first performance of the sort to be witnessed by the majority of the patients, was a most popular affair, so much so that they seemed disgruntled when they found out that future shows were to be "silent." Unfortunately as our means are limited we cannot afford the more popular but expensive form of amusement. Two treats were also given consisting of cakes, fruit, lemonade and other delicacies. Gramophone music is often played during the week and always on Sundays. Our soccer team plays some local team every fortnight and is often victorious.

French and English periodicals were sent us by people interested in the welfare of our patients but the number received was far below our requirements.

Special thanks are due to the local branch of Toc H for the interest they have taken in the Mental Hospital and for their gifts of illustrated papers and cigarettes.

23. COST OF MAINTENANCE.

The items making up the average weekly cost, per head, are given in the following table for the period 1st July, 1932 to 30th June, 1933:

ITEMS			Rs. c.
Provisions, fuel, light, not including Institution garden produce			78,223.48
Personal emoluments			95,972.70
Clothing, bedding, uniforms and washing requisites ...			15,436.06
Drugs, dressings, surgical instruments etc.			802.98
Implements, stores and sundries			2,095.23
Fees for District Commissioners of Lunacy			1,580.00
Fees for Member of Central Board			120.00
Recreation for patients			759.68
Telephone: rental and calls			168.24
Travelling and transport			179.18
		Total ...	195,337.55
Less fees received from private patients	Rs. 10,872.50		
Less sale of pigs	Rs. 581.15		
		Less ...	11,453.65
Net total expenditure			183,883.90
Average weekly cost per head ...	Rs. 5.14		

The following table gives the average weekly cost per head, the net yearly total expenditure and the daily average number of patients in hospital for the financial years 1926-27 to 1932-33 :

Years.	Net total expenditure.	Average weekly cost per head.	Daily average number of patients in hospital.
1926-27	Rs. 245,637.69	Rs. 7.86	601
1927-28	Rs. 256,831.02	Rs. 7.92	623
1928-29	Rs. 249,134.07	Rs. 7.90	606
1929-30	Rs. 226,910.87	Rs. 6.85	637
1930-31	Rs. 219,809.08	Rs. 6.27	674
1931-32	Rs. 198,170.07	Rs. 5.59	681
1932-33	Rs. 183,883.90	Rs. 5.14	688

The above table shows that the weekly cost of maintenance has again been reduced.

24. STAFF.

The staff of the hospital consists of :

1 Medical Superintendent.
1 Assistant Medical Superintendent.
1 Steward and Accountant who acts also as Head Attendant.
1 Dispenser and Storekeeper.
1 Matron.
1 Assistant Matron.
12 Male Nurses or Warders.
8 Female Nurses.
1 Gatekeeper.
1 Seamstress.
69 Male servants.
45 Female servants.

The Matron, Miss I. Rogers, proceeded on leave to Europe on 26th December, 1933.

Miss L. Dalais was appointed Nurse on 30th October, 1933, vice Miss N. Henry, resigned.

Male servant A. Chengalanee was promoted warder on 14th September, 1933, vice Mr. A. de Baize, deceased.

25. ACCOMODATION.

The Hospital is overcrowded, especially on the female side. We have at present 315 female patients who are housed in wards that were originally built for 233. As a result, we are unable to segregate the noisy and refractory cases. New admissions are not classified and have to be treated in the infirmary which has space for only 22 beds. There they meet the sick and infirm chronics who often are noisy and objectionable in their habits. Such a state of affairs is, of course, detrimental to the recoverable cases.

26. VISITS.

His Lordship the Bishop of Mauritius visited the Hospital on 1st April, and 11th November, 1933.

During the year the Central Board of Commissioners of Lunacy held 12 monthly meetings and on each occasion visited the hospital. Apart from his monthly visits with the Central Board the Honourable Medical Director also called at the hospital on 7 other occasions.

Two boards of survey were held and our accounts and stores were checked 22 times by an Audit Inspector and once by the Accountant, Medical and Health Department. No irregularities were found.

27. RELIGIOUS SERVICES.

During the year mass was said on 7 occasions. There were also two Church of England services. An average of 40 patients attended each Roman Catholic service and 7 each Anglican service.

28. CONCLUSION.

To conclude, I wish to thank the Honourable Medical Director and the Members of the Central Board of Commissioners of Lunacy for their valuable help in furthering the welfare of our patients.

J. D. DYSON, M.B., B.S., Lond.; D.P.M.,
Medical Superintendent, Mental Hospital.

Beau Bassin,
18th April, 1934.

APPENDIX VI

Annual Report on the Leper Hospital for the Year 1933

The following table gives the number of patients, admissions, discharges and deaths for 1933 :

	MALES	FEMALES
Remaining on 1st January, 1933	34	9
Admitted during year	5	4
	39	13
Discharged during year	1	1
Died during year	1	1
Absconded during year...	1	
Remaining on 31st December, 1933 ...	36	11

ADMISSIONS.

The patients admitted belonged to the following types of the disease (6 nervous 3 cutaneous cases).

N 1	1
N 2	5
C 2	1
C 3	2

Of the nine patients admitted, four (3 females 1 male) came from Rodrigues. The male patient was sent over to Mauritius because he was thought to be mentally deranged. On his arrival, the diagnosis of syphilitic meningitis was made and specific treatment for this condition promptly restored him to sanity and perfect health.

His leprotic affection had been quiescent for years, and as soon as his cerebral condition improved he was repatriated to his country of origin. Of the local cases, 2 were former patients who were re-admitted as they had no home and no relatives to look after them. They are helpless invalids.

A third case had been a purely nerve case for years and had not troubled about his condition. A few months before seeking admission, crops of modules began to appear on his face and trunk.

The remaining 2 patients are fairly old standing nerve cases.

DISCHARGES.

Two patients were discharged during the period under review. One as already mentioned, returned to Rodrigues. His leprotic affection was only very slight and it was thought better to let him return to his home and obtain treatment there. The other case concerned a nerve disease-arrested patient, who was discharged on her own application.

DEATHS.

Two deaths occurred, one patient succumbing to lympho-sarcoma, and the other two to myocardial degeneration and heart failure.

CLASSIFICATION.

At the end of the period under review the patients under treatment could be classified thus :

1o.	Mild neural case without deformity or trophic change ...	1
2o.	Advanced neural cases with deformity and trophic change ...	24
3o.	Mild cutaneous cases	4
4o.	Cutaneous cases of medium severity	10
5o.	Advanced nodular cases	3
6o.	Leucodermia	1
7o.	Cured case but patient blind	1
8o.	Cured cases, still under observation	3
		47

GENERAL REMARKS.

No noteworthy feature deserves special notice. The health conditions of the patients have remained good, and progress, if slow, has been recorded in the majority of cases. The new cases from Rodrigues have not fared very well owing to intercurrent malaria which they developed soon after arrival and the harmful effects of which they have not been able to shake off up to the close of the period under review. It is, however, a matter of a few months before they can get acclimatised and in possession of sufficient immunity against the malarial parasite.

We have been able, as forecasted last year, to put through a scheme for the employment of the able bodied patients on work on the premises of the hospital. In return for the services rendered, they are allowed a small monthly fee out of which they save whatever they can afford to do without stinting themselves.

Our aim is to provide them with congenial occupation, whilst they can look forward to having a small capital saved up by the time they are ready to be discharged.

VISITORS.

His Excellency the Governor visited the Hospital on the 21st December, 1933.

On the 21st August, 1933, we were honoured with the visit of His Grace Archcbishop J. Leen and of their Lordships, Bishop J. de Beaumont and Bishop Fortineau.

31st March, 1934.

H. ANDRE
Medical Superintendent, Leper Hospital.

APPENDIX VII

Report on the Radiological and Electrological Work performed at the various hospitals of the Colony during the year 1933.

During the year ending 31st December, 1933, 836 cases were radioscoped at Moka Hospital, of these 517 were chest cases and 319 involved examination of the gastro-intestinal tract.

The total unmber of patients examined shows an increase of 110 over last year's figure.

In the course of the chest examinations, two fairly interesting cases cropped up.

One showed the heart in the right half of the chest ; the liver and stomach, however, were normal in position.

The other, also a case of dextrocardia, with in addition a transposition of the stomach and liver. Incidentally it may be noted that the second patient showed extensive tuberculous involvement of the left lung.

The majority of persons examined were paupers, the paying patients contributed Rs. 797.88 in fees.

The expenditure amounted to Rs. 280.57, the various items were :

Gelobarine	...	...	... Rs. 163.17
Motor Spirit	...	...	... Rs. 101.20
Lubricating oil	...	...	... Rs. 16.20

The fees collected at Victoria Hospital for various electrical treatments and radiographs totalled Rs. 424.45, the electricity bill being Rs. 128.00.

For the first time in the Island Uroselectan B was used, the radiographs although not excellent ones, were of sufficient diagnostic value. This drug was employed in a case where a skiagram showed three small shadows lying almost in the middle line about the upper part of the sacrum. The clinical history was vague and not at all typical of ureteric stone. The diagnosis was clinched when the affected ureter rendered opaque by the Uroselectan was found to lead from the kidney to the uppermost of the three shadows, in its course the ureter described a bend towards the middle line thus accounting for the abnormal position of the calculi. The stones were subsequently removed at operation.

It may be interesting to record here the notes of a case treated in the electrological section.

A male diabetic patient aged 70 was admitted into hospital for a large carbuncle involving the back of the neck dietetic and insulin therapy easily controlled the amount of sugar in the urine which revealed 42.5 grms. per litre on admission.

When the case was sent down for treatment the following features were present.

The involved area at the back of the neck was about the size of the palm of the hand and had been extending downwards in spite of the usual treatment. There were four openings in the skin over the central area of the mass, the surroundings, were cyanosed and very tender. Through the openings, which exuded pus. could be seen large masses of necrotic tissue.

The patient was bedridden, looked wretchedly ill and complained bitterly of insomnia. The prognosis, in view of the advanced age of the patient, his physical condition, toxic absorption, and the extending necrosis, was grave. Treatment consisted of a combination of ultra violet and infra-red rays.

Every two days the area was irradiated by a mercury vapour burner followed by 30 minutes under the infra-red lamp. During the first week twice daily exposures to the infra-red radiation was carried out. At the end of that period, the creeping rim of congestion was stationary. The patient slept much better, pain had practically disappeared but the appearance of the carbuncle did not suggest any marked improvement, treatment was continued during the following week and before the end of that fortnight, the sloughs had started to separate and healing went on by leaps and bounds.

This case is remarkable for the startlingly rapid response to the irradiations.

Some authorities (Guillaume, Pech) hold that U.V. rays are antagonistic to infra-red irradiations, others (Peemoller, Heussner) consider that these rays are complementary and that the biological effects of the Infra-red are re-inforced by the U.V. rays.

The results in this particular case seems to favour the latter view.

The Civil Hospital is still without any X-ray plant but there are indications that this state of affairs will be remedied in the very near future. Leads from the General Electric Cos mains are now available for connecting to various electrical units.

One hundred and fifty six patients were treated by U.V. rays involving 1,563 sittings.

The fees collected amounted to Rs. 84 and the expenditure to Rs. 340.50.

28th March, 1934.

W. R. DUPRE, D.M.R.E.
Victoria Hospital.

APPENDIX VIII

RETURN OF DISEASES AND DEATHS (IN PATIENTS) FOR THE YEAR 1933

DISEASES	Remaining in Hospital at end of 1932	Yearly total: Admissions	Yearly total: Deaths	Total cases treated	Remaining in Hospital at end of 1933
I.—*Epidemic, Endemic and Infectious Diseases*					
1. Enteric Group—					
(*a*) Typhoid Fever	3	75	25	78	4
(*b*) Paratyphoid A.	—	1	—	1	—
(*c*) Paratyphoid B.	—	—	—	—	—
(*d*) Type not defined	—	—	—	—	—
2. Typhus	—	—	—	—	—
3. Relapsing Fever	—	—	—	—	—
4. Undulant Fever	—	—	—	—	—
5. Malaria—					
(*a*) Tertian	10	1,060	25	1,070	7
(*b*) Quartan	—	70	—	70	1
(*c*) Aestivo-autumnal	—	11	—	11	—
(*d*) Cachexia	13	603	47	616	10
(*e*) Blackwater	1	28	4	29	1
(*f*) Unclassified	17	1,273	38	1,290	5
6. Smallpox—					
Alastrim	—	—	—	—	—
7. Measles	—	—	—	—	—
8. Scarlet Fever	—	—	—	—	—
9. Whooping Cough	—	—	—	—	—
10. Diphtheria	—	17	3	17	—
11. Influenza	5	1,071	25	1,076	5
12. Miliary Fever	—	—	—	—	—
13. Mumps	—	4	—	4	—
14. Cholera	—	—	—	—	—
15. Epidemic diarrhœa	—	18	—	18	—
16. Dysentery—					
(*a*) Amœbic	6	527	37	533	4
(*b*) Bacillary	8	214	25	222	1
(*c*) Undefined or due to other causes	1	309	9	310	4
17. Plague—					
(*a*) Bubonic	—	—	—	—	—
(*b*) Pneumonic	—	—	—	—	—
(*c*) Septicæmic	—	—	—	—	—
(*d*) Undefined	—	—	—	—	—
18. Yellow Fever	—	—	—	—	—
Total carried forward ...	64	5,281	238	5,345	42

DISEASES	Remaining in Hospital at end of 1932	Yearly total: Admissions	Yearly total: Deaths	Total cases treated	Remaining in Hospital at end of 1933
Brought forward ...	64	5,281	238	5,345	42
I.—*Epidemic, Endemic and Infectious Diseases.*—(Contd.)					
19. Spirochætosis	—	—	—	—	—
ictero-hæmorrhagica	—	—	—	—	—
20. Leprosy	—	—	—	—	—
21. Erysipelas	1	57	6	58	2
22. Acute Poliomyelitis	—	—	—	—	—
23. Encephalitis Lethargica	—	1	—	1	—
24. Epidemic Cerebro-spinal Fever ...	—	—	—	—	—
25. Other Epidemic Diseases—					
(*a*) Rubeola (German Measles) ...	—	—	—	—	—
(*b*) Varicella (Chicken-pox) ...	—	2	—	2	—
(*c*) Kala-azar	—	—	—	—	—
(*d*) Phlebotomus Fever	—	—	—	—	—
(*e*) Dengue	—	—	—	—	—
(*f*) Epidemic Dropsy	—	—	—	—	—
(*g*) Yaws	—	—	—	—	—
(*h*) Trypanosomiasis	—	—	—	—	—
26. Glanders	—	—	—	—	—
27. Anthrax	—	—	—	—	—
28. Rabies	—	—	—	—	—
29. Tetanus	1	34	18	35	2
30. Mycosis	—	2	—	2	—
31. Tuberculosis Pulmonary and Pharyngeal	10	715	116	725	23
32. Tuberculosis of the Meninges or Central Nervous System ...	—	1	1	1	—
33. Tuberculosis of the Intestine or Peritoneum	—	8	2	8	—
34. Tuberculosis of the Vertebral Column	—	14	1	14	1
35. Tuberculosis of Bones and Joints ...	1	35	—	36	1
36. Tuberculosis of other organs—					
(*a*) Skin or Subcutaneous Tissue (Lupus)	—	10	—	10	—
(*b*) Bones	—	46	—	46	—
(*c*) Lymphatic System	1	20	—	21	—
(*d*) Genito-Urinary	1	1	—	2	—
(*e*) Other Organs	—	—	—	—	—
37. Tuberculosis disseminated—					
(*a*) Acute	—	—	—	—	—
(*b*) Chronic	—	—	—	—	—
Total carried forward ...	79	6,227	382	6,306	71

DISEASES	Remaining in Hospital at end of 1932	Yearly total: Admissions	Yearly total: Deaths	Total cases treated	Remaining in Hospital at end of 1933
Brought forward ...	79	6,227	382	6,306	71
I.—*Epidemic, Endemic and Infectious Diseases.*— (Contd.)					
38. Syphilis—					
(*a*) Primary	—	35	—	35	1
(*b*) Secondary	—	34	—	34	—
(*c*) Tertiary	4	138	6	142	1
(*d*) Hereditary	6	56	11	62	3
(*e*) Period not indicated... ...	1	223	5	224	—
39. Soft Chancre	2	61	—	63	3
40. A.—Gonorrhœa and its complications...	8	242	5	250	5
B.—Gonorrhœal Ophthalmia ...	—	12	—	12	—
C.—Gonorrhœal Arthritis	2	17	—	19	—
D.—Gonorrhœal Venereum ...	—	—	—	—	—
41. Septicæmia	—	6	5	6	—
42. Other Infectious Diseases—					
(*a*) Trypanosomiasis	—	—	—	—	—
(*b*) Filariasis	—	55	1	55	4
(*c*) Pyæmia	—	2	2	2	—
II.—*General Diseases not mentioned above*					
43. Cancer or other malignant Tumours of the Buccal Cavity	—	9	3	9	—
44. Cancer or other malignant Tumours of the Stomach or Liver ...	1	16	6	17	1
45. Cancer or other malignant Tumours of the Peritoneum, Intestines Rectum	—	15	6	15	—
46. Cancer or other malignant Tumours, of the Female Genital Organs ...	1	65	6	66	1
47. Cancer or other malignant Tumours of the Breast	1	8	1	9	—
48. Cancer or other malignant Tumours of the Skin	—	6	—	6	—
49. Cancer or other malignant Tumours of Organs not specified	—	16	6	16	2
50. Tumours non-malignant	—	82	1	82	2
51. Acute Rheumatism	6	153	1	159	4
52. Chronic Rheumatism	5	207	—	212	—
53. Scurvy (including Barlow's Disease)	—	—	—	—	—
54. Pellagra	—	—	—	—	—
Total carried forward ...	116	7,685	447	7,801	98

DISEASES	Remaining in Hospital at end of 1932	Yearly total: Admissions	Yearly total: Deaths	Total cases treated	Remaining in Hospital at end of 1933
Brought forward ...	116	7,685	447	7,801	98
II.—*General Diseases not mentioned above.*—(Contd.)					
55. Beri-Beri	—	—	—	—	—
56. Rickets	—	1	—	1	—
57. Diabetes (not including Insipidus)...	2	58	—	60	1
58. Anæmia—					
(*a*) Pernicious	—	40	4	40	—
(*b*) Other Anæmias and Chlorosis	—	161	22	161	1
59. Diseases of the Pituitary Body ...	—	—	—	—	—
60. Diseases of the Thyroid Gland—					
(*a*) Exophthalmic Goitre ...	—	—	—	—	—
(*b*) Other Diseases of the Thyroid Glands, Myxœdema	—	4	—	4	—
61. Diseases of the Para-Thyroid Glands	—	—	—	—	—
62. Diseases of the Thymus	—	—	—	—	—
63. Diseases of the Supra-Renal Glands	—	—	—	—	—
64. Diseases of the Spleen	—	35	—	35	—
65. Leukœmia—					
(*a*) Leukœmia	—	—	—	—	—
(*b*) Hodgkin's Diseases	—	3	—	3	—
66. Alcoholism	1	18	—	19	—
67. Chronic poisoning by mineral substances (lead, mercury, etc.) ..	—	—	—	—	—
68. Chronic poisoning by organic substances (Morphia, Cocaine, etc.)	—	—	—	—	—
69. Other General Diseases—					
Auto-intoxication	—	1	—	1	—
Purpura-Hæmorrhagica .	—	—	—	—	—
Hæmophilia	—	—	—	—	—
Diabetes Insipidus	—	4	—	4	—
Uræmia	—	1	1	1	—
III.—*Affections of the Nervous System and Organs of the Senses*					
70. Encephalitis (not including Encephalitis Lethargica)	—	1	—	1	—
71. Meningitis (not including Tuberlous Meningitis or Cerebro-spinal Meningitis)	—	8	2	8	1
Total carried forward ..	119	8,020	476	8,139	101

DISEASES	Remaining in Hospital at end of 1932	Yearly total: Admissions	Yearly total: Deaths	Total cases treated	Remaining in Hospital at end of 1933
Brought forward ..	119	8,020	476	8,139	101
III.—*Affections of the Nervous System and organs of the senses.*—(Contd.) ..					
72. Locomotor Ataxia	—	1	—	1	—
73. Other affections of the Spinal Cord..	—	—	—	—	—
74. Apoplexy—					
(*a*) Hæmorrhage...	—	31	13	31	—
(*b*) Embolism	—	2	2	2	—
(*c*) Thrombosis	—	2	1	2	—
75. Paralysis—					
(*a*) Hemiplegia	2	50	3	52	1
(*b*) Other Paralyses	—	22	1	22	1
76. General Paralysis of the Insane ..	—	4	1	4	1
77. Other forms of Mental Alienation .	—	4	—	4	—
78. Epilepsy	1	96	3	97	1
79. Eclampsia, Convulsions (non-puerperal) 5 years over	—	5	2	5	—
80. Infantile convulsions	—	5	1	5	—
81. Chorea	—	1	1	1	—
82. A.—Hysteria	—	9	—	9	—
B.—Neuritis	—	28	—	28	—
C.—Neurasthenia	—	4	—	4	—
83. Cerebral softening	—	3	—	3	—
Cerebral contusion	—	1	1	1	—
84. Other affections of the Nervous System, such as paralysis Agitans, etc.	—	61	—	61	1
85. Affections of the Organs of Vision—					
(*a*) Diseases of the eye	—	170	—	170	3
(*b*) Conjunctivitis	1	136	—	137	1
(*c*) Trachoma	—	—	—	—	—
(*d*) Tumours of the eye	—	2	—	2	—
(*e*) Other affections of the eye ...	6	207	—	213	3
86. Affections of the Ear or Mastoid Sinus	2	110	1	112	2
Other affections of the Ear ...	—	38	—	38	—
IV.—*Affections of the Circulatory System*					
87. Pericarditis	—	4	—	4	—
88. Acute Endocarditis or Myocarditis...	1	19	2	20	—
89. Angina Pectoris	—	1	—	1	—
Total carried forward ...	132	9,036	508	9,168	115

DISEASES	Remaining in Hospital at end of 1932	Yearly total: Admissions	Yearly total: Deaths	Total cases treated	Remaining in Hospital at end of 1933
Brought forward ...	132	9,036	508	9,168	115
IV.—*Affections of the Circulatory System.*—(Contd.)					
90. Other Diseases of the Heart—					
(*a*) Vulvular—					
Mitral	3	83	19	86	2
Aortic	—	13	2	13	—
Tricuspid	—	—	—	—	—
Pulmonary	—	—	—	—	—
(*b*) Myocarditis	1	44	14	45	—
(*c*) Tachycardia	—	2	—	2	—
91. Diseases of the Arteries—					
(*a*) Aneurism	—	—	—	—	—
(*b*) Arterio-Sclorosis	1	58	3	59	—
(*c*) Other Diseases	—	—	—	—	—
92. Embolism or Thrombosis (non-cerebral)	—	4	4	4	—
93. Diseases of the Veins—					
Hæmorrhoids	3	164	—	167	1
Varicose Veins	—	3	—	3	—
Phlebitis	—	8	—	8	—
94. Diseases of the Lymphatic System—					
Lymphangitis...	1	43	—	44	—
Lymphadenitis, Bubo (non-specific)	8	278	—	286	1
95. Hæmorrhage of undetermined cause	—	1	1	1	—
96. Other affections of the Circulatory System	1	20	6	21	2
V.—*Affections of the Respiratory System*					
97. Diseases of the Nasal Passages—					
Adenoids	—	2	—	2	—
Polipus	—	30	—	30	—
Rhinitis	—	9	—	9	—
Coryza	—	6	—	6	—
Other affections	—	19	1	19	—
98. Affections of the Larynx—					
Laryngitis	—	8	—	8	—
99. Bronchitis—					
(*a*) Acute	2	561	16	563	5
(*b*) Chronic	3	247	17	250	4
(*c*) Unclassified	1	48	—	49	—
Total carried forward	156	10,687	591	10,843	130

DISEASES	Remaining in Hospital at end of 1932	Yearly total: Admissions	Yearly total: Deaths	Total cases treated	Remaining in Hospital at end of 1933
Brought forward ...	156	10,687	591	10,843	130
V.—*Affections of the Respiratory System.*—(Contd.)					
100. Broncho-Pneumonia	—	174	57	174	4
101 Pneumonia—					
(*a*) Lobar	3	108	40	111	3
(*b*) Unclassified	3	333	105	336	9
102. Pleurisy, Emphysema	1	42	2	43	1
103. Congestion of the Lungs ...	—	14	8	14	—
104. Gangrene of the Lungs	—	4	2	4	—
105. Asthma	1	308	4	309	4
106. Pulmonary Emphysema ...	—	19	3	19	1
107. Other affections of the Lungs—					
Pulmonary Spirochætosis	—	—	—	—	—
Unclassified	—	10	2	10	—
VI.—*Diseases of the Digestive System*					
108. A.—Diseases of teeth or gums—					
Caries, Pyorrhæa, etc. ...	3	190	—	193	—
B.—Other affections of the Mouth—					
Stomatitis	—	18	—	18	1
Glossitis, etc.	—	4	—	4	—
109. Affections of the Pharynx or Tonsils—					
Tonsilitis	—	218	—	218	—
Pharyngitis	—	9	—	9	—
110 Affections of the Œsophagus ...	—	3	1	3	—
111. A.—Ulcer of the Stomach ...	1	50	10	51	—
B.—Ulcer of the Duodenum ...	—	63	5	63	—
C.—Ulcer pyloric	—	4	—	4	—
112. Other affections of the Stomach—					
Gastritis	1	68	—	69	2
Dyspepsia, etc.	3	265	—	268	4
113. Diarrhœa and Enteritis—					
Under two years	1	109	25	110	1
114. Diarrhœa and Enteritis—					
Two years and over	1	285	43	286	5
Colitis	—	34	1	34	—
Ulceration	—	10	2	10	—
114a Sprue	—	—	—	—	—
115. Ankylostomiasis	23	2,800	120	2,823	19
Total carried forward ...	197	15,829	1,021	16,026	184

DISEASES	Remaining in Hospital at end of 1932	Yearly total: Admissions	Yearly total: Deaths	Total cases treated	Remaining in Hospital at end of 1933
Brought forward ..	197	15,829	1,021	16,026	184
VI.—*Diseases of the Digestive System.*—(Contd.)					
116. Diseases due to Intestinal Parasites—					
(*a*) Cestodia (Tænia)	—	4	—	4	—
(*b*) Trematoda (Flukes)	—	—	—	—	—
(*c*) Nematoda (other than ankylostoma)—					
Ascaris	4	153	7	157	1
Trichocephalus dispar ..	—	10	—	10	—
Trichinia	—	—	—	—	—
Dracunculus	—	—	—	—	—
Strongylus	—	—	—	—	—
Oxyuris	—	—	—	—	—
(*d*) Coccidia	—	—	—	—	—
(*e*) Other parasites ...	1	55	3	56	—
(*f*) Unclassified	9	63	2	72	4
117. Appendicitis	6	349	1	355	3
118. Hernia	3	139	4	142	1
119. A.—Affections of the Anus, Fistula, etc.	1	75	2	76	—
B.—Other affections of the Intestines—					
Enteroptosis	—	2	—	2	—
Constipation	1	51	—	52	1
Flatulence ...	—	7	—	7	—
120 Acute yellow atrophy of the Liver ..	—	—	—	—	—
121 Hydatid of the Liver	—	—	—	—	—
122 Cirrhosis of the Liver—					
(*a*) Alcoholic	—	3	—	3	—
(*b*) Other forms	—	61	10	61	2
123. Biliary Calculus	—	26	—	26	—
124. Other affections of the Liver—					
Abscess...	—	12	6	12	1
Hepatitis	1	87	1	88	..
Cholecystitis	1	59	3	60	1
Jaundice	1	18	2	19	1
125. Diseases of the Pancreas	—	1	1	1	—
126. Peritonitis (of unknown cause)	—	10	8	10	—
127. Other affections of the Digestive System	2	80	2	82	2
Total carrie forward ...	227	17,094	1,073	17,321	201

DISEASES	Remaining in Hospital at end of 1932	Yearly total: Admissions	Yearly total: Deaths	Total cases treated	Remaining in Hospital at end of 1933
Brought forward ...	227	17,094	1,073	17,321	201
VII.—*Diseases of the Genito-urinary System (non-Venereal)*					
128. Acute Nephritis	4	300	70	304	10
129. Chronic Nephritis	5	272	39	277	3
130. A.—Chyluria	—	3	—	3	—
B.—Schistosomiasis	—	58	—	58	—
C.—Mobile Kidney	—	2	—	2	—
131. Other affections—					
Pyelitis, etc.	—	30	8	30	—
Bilharziasis	—	36	—	36	—
132. Urinary Calculus	2	29	—	31	1
133. Diseases of the Bladder—					
Cystitis	1	124	2	125	2
134. Diseases of the Urethra—					
(*a*) Stricture	—	49	—	49	—
(*b*) Other	3	50	1	53	1
135. Diseases of the Prostate—					
Hypertrophy	—	4	—	4	—
Prostatitis	—	17	2	17	1
136. Diseases (non-Venereal) of the Genital Organs of Man—					
Epididymitis	—	11	—	11	—
Orchitis	1	107	—	108	2
Hydrocele	2	253	—	255	3
Ulcer of Penis...	—	13	—	13	—
Other diseases...	—	74	1	74	2
137. Cysts or other affections non-malignant Tumours of the Ovaries	1	22	1	23	—
138. Salpingitis	1	121	5	122	2
Abscess of the Pelvis	—	16	1	16	—
139. Uterine Tumours (non-malignant)	—	10	—	10	—
140. Uterine Hæmorrhage (non-puerperal)	—	61	—	61	—
141. A.—Metritis	2	27	1	29	—
B.—Other affections of the Female Genital Organs—					
Displacements of Uterus ...	2	65	—	67	2
Menorrhagia	—	22	1	22	—
Amenorrhœa	—	9	—	9	—
Dismenorrhœa	—	11	—	11	—
Leucorrhœa	—	73	—	73	—
Fibroma of Uterus	—	12	—	12	—
Unclassified	—	35	—	35	1
Total carried forward ...	251	19,010	1,205	19,261	231

DISEASES	Remaining in Hospital at end of 1932	Yearly total		Total cases treated	Remaining in Hospital at end of 1933
		Admissions	Deaths		
Brought forward ...	251	19,010	1,205	19,261	231
VII.—*Diseases of the Genito-urinary System (non-Venereal)*—(Contd.)					
142. Diseases of the Breast (non-puerperal)—					
Mastitis	—	30	—	30	1
Abscess	3	206	—	209	1
Unclassified	—	1	—	1	—
VIII.—*Puerperal State*					
143. A.—Normal Labour	3	911	3	914	8
B.—Accidents of Pregnancy—					
(*a*) Abortion	1	96	—	97	1
(*b*) Ectopic Gestation	—	4	—	4	—
(*c*) Other accidents of Pregnancy	—	86	5	86	2
144. Puerperal Hæmorrhage	—	6	1	6	—
145. Other accidents of Parturition ...	—	7	—	7	—
146. Puerperal Septicæmia	3	29	8	32	—
147. Phlegmasia Dolens	—	—	—	—	—
148. Puerperal Eclampsia	—	5	4	5	—
149. Sequelæ of Labour	—	9	5	9	—
150. Puerperal affections of the Breast...	4	77	—	81	3
Gestatio, Puerperal Insanity, etc...	6	136	10	142	8
IX.—*Affections of the Skin and Cellular Tissues*					
151. Gangrene	3	33	15	36	3
152. Boil—					
Carbuncle	—	135	2	135	2
153. Abcess—					
Whitlow	—	132	—	132	1
Cellulitis	22	354	7	376	18
Unclassified	49	1,385	23	1,434	55
154. A.—Tinea	—	1	—	1	—
B.—Scabies	3	449	—	452	1
155. Other Diseases of the Skin—					
Brythema	—	7	—	7	—
Urticaria	—	8	—	8	—
Eczema	1	114	—	115	1
Herpes	—	5	—	5	—
Psoriasis	—	16	—	16	—
Elephantiasis	—	24	—	24	3
Myiasis	—	18	—	18	—
Chigœs	—	—	—	—	—
Cutaneous Leishmaniasis ...	—	39	—	39	—
Unclassified	11	300	2	311	6
Total carried forward ...	360	23,633	1,290	23,993	345

DISEASES	Remaining in Hospital at end of 1932	Yearly total: Admissions	Yearly total: Deaths	Total cases treated	Remaining in Hospital at end of 1933
Brought forward ...	360	23,633	1,290	23,993	345
X.—*Diseases of the Bones and Organs of Locomotion (other than Tuberculous)*					
156. Diseases of Bones—					
Osteitis	1	32	1	33	1
157. Diseases of Joints—					
Arthritis	2	121	8	123	1
Synovitis	2	50	—	52	—
158. Other Diseases of Bones or Organs of Locomotion	3	59	1	62	4
XI.—*Malformations*					
159. Malformations—					
Hydrocephalus	—	—	—	—	—
Hypospadias	—	1	—	1	—
Spina Bifida, &c.	—	1	—	1	—
Unclassified	—	12	—	12	—
XII.—*Diseases of Infancy*					
160. Congenital Debility	—	49	34	49	—
161. Premature Birth	—	69	29	69	—
162. Other affections of Infancy ...	—	10	8	10	—
163. Infant neglect (infants of three months or over)	—	1	1	1	—
XIII.—*Affections of Old Age*					
164. Senility—					
Senile Dementia, etc.	1	146	23	147	2
XIV—*Affections produced by External Causes*					
165. Suicide by Poisoning	—	5	1	5	1
166. Corrosive Poisoning (intentional) ...	—	6	2	6	—
167. Suicide by Gas Poisoning	—	—	—	—	—
Total carried forward ...	369	24,195	1,398	24,564	354

DISEASES	Remaining in Hospital at end of 1932	Yearly total: Admissions	Yearly total: Deaths	Total cases treated	Remaining in Hospital at end of 1933
Brought forward .	369	24,195	1,398	24,564	354
XIV.—*Affections produced by External Causes.*—(Contd.)					
168. Suicide by Hanging or Strangulation	—	—	—	—	—
169. Suicide by Drowning	—	—	—	—	—
170. Suicide by Firearms	—	—	—	—	—
171. Suicide by cutting or stabbing Instruments	—	—	—	—	—
172. Suicide by jumping from a height	—	—	—	—	—
173. Suicide by crushing	—	—	—	—	—
174. Other Suicides	—	—	—	—	—
175. Food Poisoning— Botulism	—	2	1	2	—
176. Attacks of poisonous— Snake Bite	—	—	—	—	—
Insect Bite	—	—	—	—	—
177. Other accidental Poisonings ...	—	7	—	7	—
178. Burns (by fire)	1	61	17	62	1
179. Burns (other than by fire) ...	2	31	4	33	2
180. Suffocation (accidental)	—	—	—	—	—
181. Poisoning by Gas (accidental) ...	—	—	—	—	—
182. Drowning (accidental)	—	3	—	3	—
183. Wounds (by Firearms, war excepted)	—	8	3	8	1
184. Wounds (by cutting or stabbing Instruments)	8	—	1	370	11
185. Wounds (by fall)	7	362	2	141	1
186. Wounds (in mines or quarries) ...	—	134	—	—	—
187. Wounds (by machinery)	—	—	—	17	1
188. Wounds (by crushing *e.g.* railway accidents, &c.)	1	17	3	41	6
189. Injuries inflicted by animals, Bites, Kicks, etc.	2	40	—	138	2
190. Wounds inflicted on Active Service	—	136	—	—	—
191. Executions of civilians by belligerents	—	—	—	—	—
192. A—Over Fatigue	—	—	—	—	—
B—Hunger or Thirst	—	—	—	—	—
193. Exposure to cold, Frost bite, &c, ...	—	—	—	—	—
194. Exposure to heat— Heatstroke	—	—	—	—	—
Sunstroke	—	—	—	—	—
Total carried forward ...	390	24,996	1,429	25,386	379

DISEASES	Remaining in Hospital at end of 1932	Yearly total: Admissions	Yearly total: Deaths	Total cases treated	Remaining in Hospital at end of 1933
Brought forward ...	390	24,996	1,429	25,386	379
XIV.—*Affections produced by External Causes.*—(Contd.)					
195. Lightning Stroke	—	—	—	—	—
196. Electric Shock	—	1	—	1	—
197. Murder by Firearms	—	—	—	—	—
198. Murder by cutting or stabbing Instruments	—	—	—	—	—
199. Murder by other means	—	—	—	—	—
200. Infanticide (Murder of an infant under one year)	—	—	—	—	—
201. A—Dislocation	—	32	—	32	—
B—Sprain	1	35	—	36	1
C—Fracture	21	298	14	319	11
202. Other external Injuries	5	631	9	636	19
203. Death by violence of unknown cause	—	—	—	—	—
XV.—*Ill-Defined Diseases*					
204. Sudden Deaths [cause unknown]—	—	—	—	—	—
205. A.—Diseases not already specified or ill-defined—					
Ascites	1	52	1	53	1
Œdema	—	20	1	20	2
Asthenia	—	7	—	7	—
Shock	—	9	9	9	—
Hyperpyrexia	—	5	—	5	—
B.—Malingering...	—	5	—	5	—
C.—Other	89	1,091	7	1,180	15
Total	507	27,182	1,470	27,689	428

SUMMARY

DISEASES	Remaining in Hospital at end of 1932	Yearly total: Admissions	Yearly total: Deaths	Total cases treated	Remaining in Hospital at end of 1933
I.—Epidemic Endemic and Infectious Diseases	102	7,108	417	7,210	88
II.—General Diseases not mentioned above	17	903	57	920	12
III.—Affections of the Nervous System and Organs of the Senses	12	1,001	32	1,013	15
IV.—Affections of the Circulatory System	19	745	51	764	6
V.—Affections of the respiratory System	14	1,942	257	1,956	31
VI.—Diseases of the Digestive System...	63	5,395	259	5,458	49
VII.—Diseases of the Genito-Urinary System (*non-venereal*)	27	2, 53	132	2,180	32
VIII.—Puerperal State	17	1,366	36	1,383	22
IX —Affection of the Skin and Cellular Tissues	89	3,020	49	3,109	90
X.—Diseases of Bones and organs of Locomotion (*other than Tuberculous*)	8	262	10	270	6
XI.—Malformations	—	14	—	14	—
XII.—Diseases of Infancy	—	129	72	129	—
XIII.—Affections of Old Age	1	146	23	147	2
XIV.—Affections produced by external Causes	48	1,809	57	1,857	57
XV.—Ill-defined Diseases	90	1,189	18	1,279	18
Total	507	27,182	1,470	27,689	428

RETURN OF BIRTHS

	Number	Deaths
Born alive at term	755	20
Prematurely born	73	28
Still-born	176	176
Total ...	1,004	224

RETURN OF SURGICAL OPERATIONS

Operations	Number	Deaths
Operations :—		
Tumours	70	6
Evacuation of abscesses ...	2,735	54
Operations on :—		
Blood Vessels	7	—
Lymphatic Glands	96	—
Skin and Subcutaneous Tissues	472	—
Bones	100	4
Nerves	5	—
Joint	34	1
Muscles and Tendons ...	52	—
Skull and Brain	12	2
Eye	241	—
Ear	83	—
Head and Face	202	4
Chest	23	1
Abdominal Cavity	626	43
Spleen	6	1
Rectum and Anus	174	1
Urinary System	48	4
Male Generative Organs ...	434	6
Female Generative Organs...	186	10
Amputation	69	5
Obstetric Operations	95	9
Other Operations	1,431	7
Total ...	7,201	158

APPENDIX IX

RETURN OF DISEASES (OUT PATIENTS) FOR THE YEAR 1933

DISEASES	Cases		Attendances	
	Male	Female	Male	Female
I.—*Epidemic, Endemic and Infectious Diseases*				
1. Enteric Group—				
(*a*) Typhoid Fever	4	6	5	6
(*b*) Paratyphoid A.	—	—	—	—
(*c*) Paratyphoid B.	—	—	—	—
(*d*) Type not defined	—	—	—	—
2. Typhus	—	—	—	—
3. Relapsing Fever	—	—	—	—
4. Undulant Fever	—	—	—	—
5. Malaria—				
(*a*) Tertian	8,944	11,049	11,904	14,078
(*b*) Quartan	951	980	1,139	1,209
(*c*) Aestivo-autumnal	771	776	843	855
(*d*) Cachexia	2,096	2,534	2,747	3,189
(*e*) Blackwater	5	2	6	2
(*f*) Unclassified	10,831	12,829	12,849	14,764
6. Smallpox—				
Alastrim	—	—	—	—
7. Measles	—	—	—	—
8. Scarlet Fever	—	—	—	—
9. Whooping Cough	14	17	21	24
10. Diphtheria	2	3	2	3
11. Influenza	9,666	8,724	11,582	10,786
12. Miliary Fever	—	—	—	—
13. Mumps	3	3	3	3
14. Cholera	—	—	—	—
15. Epidemic diarrhœa	166	133	245	221
16. Dysentery—				
(*a*) Amœbic	1,166	970	2,246	1,703
(*b*) Bacillary	134	84	197	165
(*c*) Undefined or due to other causes	767	625	1,025	841
17. Plague—				
(*a*) Bubonic	—	—	—	—
(*b*) Pneumonic	—	—	—	—
(*c*) Septicæmic	—	—	—	—
(*d*) Undefined	—	—	—	—
18. Yellow Fever	—	—	—	—
Total carried forward ...	35,520	38,735	44,814	47,849

DISEASES	Cases		Attendances	
	Male	Female	Male	Female
Brought forward ..	35,520	38,735	44,814	47,849
I.—*Epidemic, Endemic and Infectious Diseases.*—(Contd.)				
19. Spirochætosis ictero-hæmorrhagica	—	—	—	—
20. Leprosy	—	—	—	—
21. Erysipelas	14	9	14	9
22. Acute Poliomyelitis	—	—	—	—
23. Encephalitis Lethargica	—	—	—	—
24. Epidemic Cerebro-spinal Fever ...	—	—	—	—
25. Other Epidemic Diseases—				
(*a*) Rubeola (German Measles) ...	—	—	—	—
(*b*) Varicella (Chicken-pox) ...	—	—	—	—
(*c*) Kala-azar	—	—	—	—
(*d*) Phlebotomus Fever	—	—	—	—
(*e*) Dengue	—	—	—	—
(*f*) Epidemic Dropsy	—	—	—	—
(*g*) Yaws	—	—	—	—
(*h*) Trypanosomiasis	—	—	—	—
26. Glanders	22	6	29	10
27. Anthrax	10	5	76	8
28. Rabies	—	—	—	—
29. Tetanus	4	1	4	1
30. Mycosis	—	—	—	—
31. Tuberculosis Pulmonary and Pharyngeal	1,156	789	1,748	1,179
32. Tuberculosis of the Meninges or Central Nervous System ..	—	—	—	—
33. Tuberculosis of the Intestine or Peritoneum	3	3	4	4
34. Tuberculosis of the Vertebral Column	—	—	—	—
35. Tuberculosis of Bones and Joints ...	3	3	3	3
36. Tuberculosis of other organs—				
(*a*) Skin or Subcutaneous Tissue (Lupus)	3	1	3	1
(*b*) Bones	1	—	1	—
(*c*) Lymphatic System	7	9	11	12
(*d*) Genito-Urinary	—	2	—	2
(*e*) Other Organs	—	—	—	—
37. Tuberculosis disseminated—				
(*a*) Acute	—	—	—	—
(*b*) Chronic	—	—	—	—
Total carried forward ...	36,743	39,563	46,707	49,078

DISEASES	Cases		Attendances	
	Male	Female	Male	Female
Brought forward ...	36,743	39,563	46,707	49,078
I.—*Epidemic, Endemic and Infectious Diseases.*— (Contd.)				
38. Syphilis—				
(*a*) Primary	63	27	88	33
(*b*) Secondary	46	34	108	73
(*c*) Tertiary	430	90	968	359
(*d*) Hereditary	53	30	78	61
(*e*) Period not indicated... ..	214	171	1,207	1,034
39. Soft Chancre	80	6	115	8
40. A.—Gonorrhœa and its complications...	702	99	997	228
B.—Gonorrhœal Ophthalmia ...	5	6	16	18
C.—Gonorrhœal Arthritis	81	16	99	18
D.—Gonorrhœal Venereum ...	8	16	18	20
41. Septicæmia	—	—	—	—
42. Other Infectious Diseases—				
(*a*) Trypanosomiasis	—	—	—	—
(*b*) Filariasis	38	42	86	69
II.—*General Diseases not mentioned above*				
43. Cancer or other malignant Tumours of the Buccal Cavity	—	1	—	1
44. Cancer or other malignant Tumours of the Stomach or Liver ...	1	1	1	1
45. Cancer or other malignant Tumours of the Peritoneum, Intestines Rectum	—	—	—	—
46. Cancer or other malignant Tumours, of the Female Genital Organs ...	—	1	—	1
47. Cancer or other malignant Tumours of the Breast	—	—	—	—
48. Cancer or other malignant Tumours of the Skin	1	—	1	—
49. Cancer or other malignant Tumours of Organs not specified	—	1	—	1
50. Tumours non-malignant	2	2	2	2
51. Acute Rheumatism	804	769	1,015	946
52. Chronic Rheumatism	849	801	1,362	1,247
53. Scurvy (including Barlow's Disease)	—	—	—	—
54. Pellagra	—	—	—	—
Total carried forward ...	40,120	41,676	52,868	53,198

DISEASES	Cases		Attendances	
	Male	Female	Male	Female
Brought forward ...	40,120	41,676	52,868	53,198
II.—*General Diseases not mentioned above.*—(Contd.)				
55. Beri-Beri	1	—	3	—
56. Rickets	15	6	25	10
57. Diabetes (not including Insipidus) ...	39	54	62	70
58. Anæmia—				
(*a*) Pernicious	158	182	251	259
(*b*) Other Anæmias and Chlorosis	501	737	669	998
59. Diseases of the Pituitary Body ...	—	—	—	—
60. Diseases of the Thyroid Gland—				
(*a*) Exophthalmic Goitre ...	—	—	—	—
(*b*) Other Diseases of the Thyroid Glands, Myxœdema	—	1	—	1
61. Diseases of the Para-Thyroid Glands	1	—	3	—
62. Diseases of the Thymus	—	—	—	—
63. Diseases of the Supra-Renal Glands	—	—	—	—
64. Diseases of the Spleen	305	247	442	331
65. Leukœmia—				
(*a*) Leukœmia	—	—	—	—
(*b*) Hodgkin's Diseases	—	—	—	—
66. Alcoholism	—	—	—	—
67. Chronic poisoning by mineral substances (lead, mercury, etc.) ..	—	—	—	—
68. Chronic poisoning by organic substances (Morphia, Cocaine, etc.)	—	—	—	—
69. Other General Diseases—				
Auto-intoxication	—	—	—	—
Purpura-Hæmorrhagica ..	—	1	—	1
Hæmophilia	—	—	—	—
Diabetes Insipidus	—	—	—	—
III.—*Affections of the Nervous System and Organs of the Senses*				
70. Encephalitis (not including Encephalitis Lethargica)	—	—	—	—
71. Meningitis (not including Tuberlous Meningitis or Cerebro-spinal Meningitis)	1	—	2	—
Total carried forward ...	41,141	42,904	54,325	54,868

DISEASES	Cases		Attendances	
	Male	Female	Male	Female
Brought forward ...	41,141	42,904	54,325	54,868
III.—*Affections of the Nervous System and organs of the senses*—(Contd.)				
72. Locomotor Ataxia	—	—	—	—
73. Other affections of the Spinal Cord..	4	1	5	1
74. Apoplexy—				
(*a*) Hæmorrhage	5	9	5	10
(*b*) Embolism	—	—	—	—
(*c*) Thrombosis	—	—	—	—
(*d*) Unclassified	1	3	1	3
75. Paralysis—				
(*a*) Hemiplegia	19	6	23	7
(*b*) Other Paralyses	18	16	21	16
76. General Paralysis of the Insane ..	—	—	—	—
77. Other forms of Mental Alienation .	1	2	1	2
78. Epilepsy	148	81	248	157
79. Eclampsia, Convulsions (non-puerperal) 5 years over	5	4	7	6
80. Infantile convulsions	90	63	117	82
81. Chorea	—	—	—	—
82. A.—Hysteria	—	18	—	45
B —Neuritis	79	107	110	143
C.—Neurasthenia	24	27	48	48
83. Cerebral softening	5	2	5	2
84. Other affections of the Nervous System, such as paralysis Agitans, Headache. etc.	344	335	443	449
85. Affections of the Organs of Vision—				
(*a*) Diseases of the eye	83	71	141	94
(*b*) Conjunctivitis	510	446	677	615
(*c*) Trachoma	—	—	—	—
(*d*) Tumours of the eye .. .	5	12	7	17
(*e*) Other affections of the eye ...	373	324	435	413
86. Affections of the Ear or Mastoid Sinus	652	574	867	773
IV.—*Affections of the Circulatory System*				
87. Pericarditis	12	16	16	26
88. Acute Endocarditis or Myocarditis ..	27	17	36	23
89. Angina Pectoris	—	1	—	4
Total carried forward ...	43,546	45,039	57,538	57,804

DISEASES	Cases		Attendances	
	Male	Female	Male	Female
Brought forward ...	43,546	45,039	57,538	57,804
IV.—*Affections of the Circulatory System.*—(Contd.)				
90. Other Diseases of the Heart—				
(*a*) Vulvular—				
Mitral	63	69	93	99
Aortic	23	16	31	24
Tricuspid	—	1	—	1
Pulmonary	—	—	—	—
(*b*) Myocarditis	71	106	92	128
(*c*) Unclassified	16	20	38	49
91. Diseases of the Arteries—				
(*a*) Aneurism	—	3	—	3
(*b*) Arterio-Sclorosis	226	256	301	342
(*c*) Other Diseases	99	136	116	152
92. Embolism or Thrombosis (non-cerebral)	—	—	—	—
93. Diseases of the Veins—				
Hæmorrhoids	140	54	183	81
Varicose Veins	21	4	24	4
Phlebitis	15	35	15	48
94. Diseases of the Lymphatic System—				
Lymphangitis...	16	19	29	30
Lymphadenitis, Bubo (non-specific)	59	29	72	32
95. Hæmorrhage of undetermined cause	9	23	12	27
96. Other affections of the Circulatory System	117	137	129	173
V.—*Affections of the Respiratory System*				
97. Diseases of the Nasal Passages—				
Adenoids	8	—	10	—
Polipus	12	4	25	25
Rhinitis	59	47	80	86
Coryza	69	54	84	59
Unclassified	4	3	11	5
98. Affections of the Larynx—				
Laryngitis	111	109	139	160
99. Bronchitis—				
(*a*) Acute	1,079	1,007	1,234	1,123
(*b*) Chronic	832	639	1,260	888
(*c*) Unclassified	830	734	1,017	883
Total carried forward ..	47,425	48,544	62,533	62,226

DISEASES	Cases		Attendances	
	Male	Female	Male	Female
Brought forward ...	47,425	48,544	62,533	62,226
V.—*Affections of the Respiratory System.*—(Contd.)				
100. Broncho-Pneumonia	74	49	84	61
101 Pneumonia—				
(*a*) Lobar	9	5	10	7
(*b*) Unclassified	209	90	246	110
102. Pleurisy, Emphysema	41	22	59	27
103. Congestion of the Lungs	3	—	3	—
104. Gangrene of the Lungs	—	—	—	—
105. Asthma	1,147	847	1,810	1,335
106. Pulmonary Emphysema	12	5	15	5
107. Other affections of the Lungs—				
Pulmonary Spirochætosis ..	11	28	25	50
Unclassified	17	13	24	23
VI.—*Diseases of the Digestive System*				
108. A.—Diseases of teeth or gums—				
Caries, Pyorrhæa, etc. ..	3,905	3,752	4,824	4,012
B.—Other affections of the Mouth—				
Stomatitis	350	442	452	516
Glossitis, etc	53	63	71	93
109. Affections of the Pharynx or Tonsils—				
Tonsilitis	220	256	339	396
Pharyngitis	118	125	146	142
110. Affections of the Œsophagus ...	14	14	27	19
111. A.—Ulcer of the Stomach ...	32	16	36	20
B.—Ulcer of the Duodenum .	6	—	7	—
112. Other affections of the Stomach—				
Gastritis	848	1,023	1,143	1,433
Dyspepsia, etc.	1,725	1,742	2,133	2,171
113. Diarrhœa and Enteritis—				
Under two years	580	506	719	641
114. Diarrhœa and Enteritis—				
Two years and over ...	1,128	892	1,439	1,129
Colitis	232	201	271	244
Ulceration	—	—	—	—
114a Sprue	—	—	—	—
115. Ankylostomiasis	8,687	8,520	12,974	13,290
Total carried forward ...	66,846	67,155	89,390	87,950

DISEASES	Cases		Attendances	
	Male	Female	Male	Female
Brought forward ..	66,846	67,155	89,390	87,950
VI.—*Diseases of the Digestive System* —(Contd.)				
116. Diseases due to Intestinal Parasites—				
(*a*) Cestodia (Tænia)	1	—	1	—
(*b*) Trematoda (Flukes)	—	—	—	—
(*c*) Nematoda (other than ankylostoma)—				
Ascaris	3,138	3,238	4,049	4,051
Trichocephalus dispar ..	12	6	12	6
Trichinia	—	—	—	—
Dracunculus	—	—	—	—
Strongylus	—	—	—	—
Oxyuris	28	16	34	40
(*d*) Coccidia	—	—	—	—
(*e*) Other parasites ...	27	25	36	38
(*f*) Unclassified	472	370	643	574
117. Appendicitis	56	53	81	89
118. Hernia	113	22	149	26
119. A.—Affections of the Anus, Fistula, etc.	57	32	97	39
B.—Other affections of the Intestines—				
Enteroptosis	7	8	7	8
Constipation	928	1,216	1,256	1,587
120 Acute yellow atrophy of the Liver ..	—	—	—	—
121 Hydatid of the Liver	—	—	—	—
122 Cirrhosis of the Liver—				
(*a*) Alcoholic	10	—	15	—
(*b*) Other forms	26	9	35	14
123. Biliary Calculus	2	5	2	6
124. Other affections of the Liver—				
Abscess...	5	2	5	4
Hepatitis	157	88	205	124
Cholecystitis	39	63	45	63
Jaundice	43	29	60	44
Unclassified	3	5	3	8
125. Diseases of the Pancreas	—	—	—	—
126. Peritonitis (of unknown cause) ..	—	—	—	—
127. Other affections of the Digestive System	510	385	667	528
Total carried forward ...	72,480	72,727	96,792	95,199

DISEASES	Cases		Attendances	
	Male	Female	Male	Female
Brought forward ..	72,480	72,727	96,792	95,199
VII.—*Diseases of the Genito-urinary System (non-Venereal)*				
128. Acute Nephritis	288	252	372	352
129. Chronic Nephritis	194	148	268	211
130. A.—Chyluria	1	—	1	—
B.—Schistosomiasis	148	53	339	168
131. Other affections—				
Pyelitis, etc.	41	64	61	80
132. Urinary Calculus	3	1	4	1
133. Diseases of the Bladder—				
Cystitis	245	140	306	214
134. Diseases of the Urethra—				
(*a*) Stricture	17	—	17	—
(*b*) Other	19	1	44	6
135. Diseases of the Prostate—				
Hypertrophy	10	—	16	—
Prostatitis	8	—	9	—
136. Diseases (non-Venereal) of the Genital Organs of Man—				
Epididymitis	13	—	17	—
Orchitis	179	—	246	—
Hydrocele	171	—	215	—
Ulcer of Penis...	30	—	40	—
Other diseases...	29	—	48	—
137. Cysts or other non-malignant Tumours of the Ovaries	—	4	—	4
138. Salpingitis	—	70	—	84
Abscess of the Pelvis	—	—	—	—
139. Uterine Tumours (non-malignant)	—	—	—	—
140. Uterine Hæmorrhage (non-puerperal)	—	97	—	126
141. A.—Metritis	—	68	—	94
B.—Other affections of the Female Genital Organs—				
Displacements of Uterus ...	—	54	—	72
Amenorrhœa	—	296	—	405
Dismenorrhœa	—	209	—	284
Menorrhagia	—	—	—	—
Leucorrhœa	—	462	—	730
Unclassified	—	157	—	202
Total carried forward ...	73,876	74,803	98,795	98,232

DISEASES	Cases		Attendances	
	Male	Female	Male	Female
Brought forward ...	73,876	74,803	98,795	98,232
VII.—*Diseases of the Genito-urinary System (non-Venereal)*—(Contd.)				
142. Diseases of the Breast (non-puerperal)—				
Mastitis	—	54	—	94
Abscess	—	269	—	599
Other	—	2	—	2
VIII.—*Puerperal State*				
143. A.—Normal Labour	—	389	—	391
B.—Accidents of Pregnancy—				
(*a*) Abortion	—	25	—	25
(*b*) Ectopic Gestation	—	—	—	—
(*c*) Other accidents of Pregnancy	—	123	—	170
144. Puerperal Hæmorrhage	—	—	—	—
145. Other accidents of Parturition ...	—	2	—	2
146. Puerperal Septicæmia	—	—	—	—
147. Phlegmasia Dolens	—	—	—	—
148. Puerperal Eclampsia	—	—	—	—
149. Sequelæ of Labour	—	1	—	1
150. Puerperal affections of the Breast...	—	5	—	9
IX.—*Affections of the Skin and Cellular Tissues*				
151. Gangrene	38	9	53	17
152. Boil—				
Carbuncle	245	138	427	229
153. Abcess—				
Whitlow	181	154	276	236
Cellulitis	1,149	997	2,763	2,485
Unclassified	922	514	2,022	1,077
154. A.—Tinea	18	8	22	11
B.—Scabies	3,329	2,334	4,725	3,453
155. Other Diseases of the Skin—				
Brythema	19	13	29	13
Urticaria	52	38	53	41
Eczema	682	611	913	784
Herpes	70	46	83	73
Psoriasis	94	117	148	159
Elephantiasis	13	20	20	38
Myiasis	1	1	1	1
Chigœs	—	—	—	—
Cutaneous Leishmaniasis ...	14	10	18	17
Unclassified	1,109	709	1,464	953
Total carried forward ..	81,812	81,392	111,812	109,112

DISEASES	Cases		Attendances	
	Male	Female	Male	Female
Brought forward ...	81,812	81,392	111,812	109,112
X.—*Diseases of the Bones and Organs of Locomotion (other than Tuberculous)*				
156. Diseases of Bones—				
Osteitis	3	3	3	3
157. Diseases of Joints—				
Arthritis	140	105	177	139
Synovitis	27	11	36	22
158. Other Diseases of Bones or Organs of Locomotion	7	4	7	6
XI.—*Malformations*				
159. Malformations—				
Hydrocephalus	—	—	—	—
Hypospadias	—	—	—	—
Spina Bifida, &c.	—	2	—	11
XII.—*Diseases of Infancy*				
160. Congenital Debility	22	17	27	18
161. Premature Birth	—	—	—	—
162. Other affections of Infancy ...	14	12	23	14
163. Infant neglect (infants of three months or over)	1	—	1	—
XIII.—*Affections of Old Age*				
164. Senility—				
Senile Dementia, etc.	60	47	65	52
Unclassified	104	136	132	190
XIV—*Affections produced by External Causes*				
165. Suicide by Poisoning	—	—	—	—
166. Corrosive Poisoning (intentional) ...	—	—	—	—
167. Suicide by Gas Poisoning	—	—	—	—
Total carried forward ...	82,190	81,729	112,283	109,567

DISEASES	Cases		Attendances	
	Male	Female	Male	Female
Brought forward ..	82,190	81,729	112,283	109,567
XIV.—*Affections produced by External Causes.*—(Contd.)				
168. Suicide by Hanging or Strangulation	—	—	—	—
169. Suicide by Drowning	—	—	—	—
170. Suicide by Firearms	—	—	—	—
171. Suicide by cutting or stabbing Instruments	—	—	—	—
172. Suicide by jumping from a height	—	—	—	—
173. Suicide by crushing	—	—	—	—
174. Other Suicides	—	—	—	—
175. Food Poisoning—				
Botulism	1	—	1	—
176. Attacks of poisonous—				
Snake Bite	—	—	—	—
Insect Bite	9	21	9	22
177. Other accidental Poisonings ..	1	2	1	2
178. Burns (by fire)	43	23	110	40
179. Burns (other than by fire) ...	27	15	70	72
180. Suffocation (accidental)	—	—	—	—
181. Poisoning by Gas (accidental) ...	—	—	—	—
182. Drowning (accidental)	—	—	—	—
183. Wounds (by Firearms, war excepted)	1	—	6	—
184. Wounds (by cutting or stabbing Instruments)	791	356	1,520	726
185. Wounds (by fall)	242	110	465	232
186. Wounds (in mines or quarries) ...	—	—	—	—
187. Wounds (by machinery)	23	8	35	8
188. Wounds (by crushing *e.g.* railway accidents, &c.)	21	6	118	15
189. Injuries inflicted by animals, Bites, Kicks, etc.	235	107	354	140
190. Wounds inflicted on Active Service	—	—	—	—
191. Executions of civilians by belligerents	—	—	—	—
192. A—Over Fatigue	2	—	2	—
B—Hunger or Thirst	—	—	—	—
193. Exposure to cold, Frost bite, &c, ...	—	—	—	—
194. Exposure to heat—				
Heatstroke	—	—	—	—
Sunstroke	—	1	—	1
Total carried forward ...	83,586	82,378	114,974	110,825

DISEASES	Cases		Attendances	
	Male	Female	Male	Female
Brought forward ...	83,586	82,378	114,974	110 825
XIV.—*Affections produced by External Causes.*—(Contd.)				
195. Lightning Stroke	—	—	—	—
196. Electric Shock	—	—	—	—
197. Murder by Firearms	—	—	—	—
198. Murder by cutting or stabbing Instruments	—	—	—	—
199. Murder by other means	—	—	—	—
200. Infanticide (Murder of an infant under one year)	—	—	—	—
201. A—Dislocation	17	9	22	16
B—Sprain	47	22	67	22
C—Fractu e	85	41	105	50
202. Other external Injuries	809	381	1,412	725
203. Death by violence of unknown cause	—	—	—	—
XV.—*Ill-Defined Diseases*				
204. Sudden Deaths [cause unknown]...	—	—	—	—
205. A.—Diseases not already specified or ill-defined—				
Ascites	40	36	50	51
Œdema	58	34	61	41
Asthenia	26	14	32	16
Shock	1	—	1	—
Hyperpyrexia	—	—	—	—
B.—Malingering...	108	—	108	—
C.—Other	248	351	303	476
Total	85,025	83,266	117,135	112,222

SUMMARY

DISEASES	Cases		Attendances	
	Male	Female	Male	Female
I.—Epidemic Endemic and Infectious Diseases	38,463	40,100	50,487	50,999
II.—General Diseases not mentioned above	2,677	2,804	3,836	3,869
III.—Affections of the Nervous System and Organs of the Senses	2,367	2,101	3,163	2,883
IV.—Affections of the Circulatory System	914	942	1,187	1,246
V.—Affections of the respiratory System	4,527	3,656	6,136	4,847
VI.—Diseases of the Digestive System...	23,532	23,124	31,983	31,355
VII.—Diseases of the Genito-Urinary System (*non-venereal*)	1,396	2,401	2,003	3,728
VIII.—Puerperal State	—	545	—	598
IX —Affection of the Skin and Cellular Tissues	7,936	5,719	13,017	9,587
X.—Diseases of Bones and organs of Locomotion (*other than Tuberculous*)	177	123	223	170
XI.—Malformations	—	2	—	11
XII.—Diseases of Infancy	37	29	51	32
XIII.—Affections of Old Age	164	183	197	242
XIV.—Affections produced by external Causes	2,354	1,102	4,297	2,071
XV.—Ill-defined Diseases	481	435	555	584
Total	85,025	83,266	117,135	112,222

APPENDIX X

Extract from the Report on the Health Condition of Rodrigues for the Year 1933 made by Dr. E. H. Madge G.M.O., Rodrigues.

I.—HOSPITAL AND DISPENSARIES: WORK AND STATISTICS

1. The equipment and accommodation of the Hospital has been improved during the year. A special warrant granted during the earlier months has permitted the stock of instruments to be increased, and the provision of some of the more modern drugs. Other improvements which have been carried out include the provision of mosquito-nets, of an operation table, and of a sterilizer. A stock of Anti-diphtheritic serum has been received, and is now available should an outbreak of the disease occur.

All the Hospital absorption pits have been dug up and now function satisfactorily.

2. The following table shows the main diseases for which hospitalisation has been necessary:

Acute Gastritis	13
Abscesses	47
Burns	6
Broncho-pneumonia, Pneumonia and Bronchitis	40
Debility and Athrepsy	13
Dermatophiliasis	1
Eye Diseases	6
Empyema	1
Diseases of circulatory system	7
Gonorrhoea	6
Gynaecological and Obstetric cases	17
Gastro-Enteritis	9
Diseases of Genito Urinary Tract	9
Injury and wounds	25
Influenza	12
Diseases of Intestinal Tract	9
Meningitis	4
Liver Abscess	2
Neoplasms	4
Osteomyelitis	2
Pleural Effusion and Pleurisy	8
Strangulated Inguinal Hernia	3
Pulmonary Tuberculosis	13
Spinal Caries	2
Syphilis	9
Tetanus	2
Miscellaneous	84
Total number of admissions	354

Number of patients admitted for treatment only, and who provided their own diet 94

3.—*Deaths in Hospital* were caused by :

Athrepsy	1
Broncho-pneumonia	2
Burns	2
Meningitis	1
Paralytic Ileus	1
Myocarditis	2
Pulmonary Tuberculosis	3
Tetanus	1
Uraemia	1
Total	14

4.—*Operations, Outdoor and Indoor—, performed at the Hospital.*

Minor operations ... 174 (Exclusive of dental extractions).
Major operations ... 10

Major operations were performed for :

Strangulated Inguinal hernia	3
Trephining for Compound depressed fracture of skull...	1
Acute osteomyelitis of Femur	1
Chronic osteomyelitis of Tibia	1
Curettage	2
Liver Abscess	1
Excision of Parotid tumour	1
Total	10

Operative Mortality : Nil.

5.—*Hypodermic Medication* (outdoor).

Injections to Lepers	606
Novarsenobenzol Injections	93
Biniodide of Mercury Injections ...	97
Other Injections	74
Injections to Indoor Patients	271
Total ...	1,141

6. *Microscopic Examinations :* 141 such examinations were carried out. This part of the work has been considerably hampered by the microscope being out of door. It now functions satisfactorily, missing parts having been received.

7.—*Dispensary Work :*

Number of attendances at Port Mathurin Dispensary	8,395
Number of attendances at Mont Lubin ...	8,150
Total ...	16,545

VACCINATIONS.

Port Mathurin :	Successful	129
	Unsuccessful ...	36
Mont Lubin :	Successful	96
	Unsuccessful ...	52
	Total ...	313

Operations and Injections done at Mont Lubin Dispensary :

Minor operations	43
Injections to Lepers	223
Other injections	53
Total ...	276

Below will be found a list of the commoner diseases and of the monthly attendances at both dispensaries. The number of attendances for influenza and bronchitis was highest during February, March, June, October and November so that this disease was more or less in the epidemic form during nearly half the year. Gastro-enteritis was markedly more prevalent during January and February.

An attempt was made to differentiate between the number of actual cases and the number of attendances. This had to be given up owing to the large number of persons in Rodrigues having the same surname and very often the same Christian name as well, at a rough estimation the number of actual cases was, in the case of Influenza, Acute Gastritis, Tonsilitis, and Debility, about half the number of attendances.

(Two lists of the commoner diseases, and monthly attendances will be found overleaf, pages 106 and 107).

CHANGES IN STAFF.

Dispenser Sulliman proceeded to Mauritius on February 21st, and was replaced by Dispenser Larché.

Dispenser Babet, in charge of Mount Lubin Dispensary was transferred to Mauritius on August 21st, and was replaced by Dispenser Louis Joseph.

COMMONER DISEASES AND MONTHLY ATTENDANCES

PORT MATHURIN

Diseases	January	February	March	April	May	June	July	August	September	October	November	December	Total
Anaemia and Debility	151	69	115	92	77	80	54	48	67	53	58	60	924
Ascariasis	38	65	57	37	42	38	29	19	38	52	47	55	517
Eye Diseases	4	2	5	1	1	1	1	5	2	6	7	6	41
Gastritis and Dyspepsia	64	40	16	51	66	66	50	46	47	59	72	68	645
Gastro-Enteritis	47	26	1	4	9	10	3	2	3	2	2	3	112
Gonorrhoea	10	8	9	1	1	5	3	2	4	1	3	2	49
Heart Diseases	2	2	3	2	1	3	1	—	2	2	1	2	21
Influenza and Bronchitis	89	400	259	158	336	205	105	122	231	250	156	55	2,366
Malaria	2	3	1	3	—	—	—	—	2	2	2	1	16
Pulmonary Tuberculosis	12	5	6	14	6	12	10	3	8	6	9	3	94
Skin Diseases	28	17	14	17	12	17	10	7	28	35	36	48	269
Sinusitis	2	3	3	1	9	3	2	6	10	8	6	8	61
Syphilis	11	7	8	10	4	10	8	5	3	5	1	—	72
Unclassified	226	240	200	273	245	305	238	288	285	320	308	280	3,208
												Total ...	... 8,395

COMMONER DISEASES AND MONTHLY ATTENDANCES

MOUNT LUBIN

Diseases	January	February	March	April	May	June	July	August	September	October	November	December	Total
Anaemia and Debility	171	76	80	61	81	38	50	73	82	63	64	43	882
Ascariasis	102	61	54	37	57	33	31	38	55	61	68	38	635
Eye Diseases	1	5	1	3	5	4	5	5	16	8	4	5	62
Gastritis and Dyspepsia	73	21	24	30	41	35	78	46	51	45	53	39	536
Gastro-Enteritis	31	16	—	1	2	2	1	1	2	—	2	—	58
Gonorrhoea	5	3	5	4	6	—	3	1	3	1	4	—	35
Heart Diseases	20	3	2	5	2	1	10	2	2	3	6	1	57
Influenza and Bronchitis	137	415	338	163	308	159	150	198	334	393	196	40	2,831
Malaria	—	—	1	—	—	2	—	—	—	—	—	—	3
Pulmonary Tuberculosis	29	23	16	23	26	18	22	24	19	18	16	15	249
Skin Diseases	30	6	10	11	7	11	17	18	23	15	20	22	190
Sinusitis	2	—	1	4	10	4	3	5	3	5	4	4	45
Syphilis	3	2	1	—	2	4	3	1	7	10	2	1	36
Unclassified	425	184	186	191	183	161	178	182	178	233	240	190	2,531
												Total	8,150

II.—NOTES ON SOME DISEASES

1.—*Amoebic Dysentery :* About a dozen cases of Amoebic Dysentery have been noted during the year. *Entamoeba Histolytica* was demonstrated microscopically in the majority of cases. There were also two cases of Liver Abscess ; both were cured.

2.—*Acute Gastro-Enteritis :* During January and February there were 73 attendances for this disease at Port Mathurin Dispensary. The disease ceased abruptly in the epidemic form after the first heavy rains in March. Only one case occurred during this month, and sporadic cases were found later in the year. The number of attendances at Mount Lubin Dispensary for the same period was 47. There were two deaths.

3.—*Anaemia :* There is a fair amount of anaemia in the Island. This is more frequent in some places than in others, e.g., at Baie Malgache, parts of Camp du Roi, and Acacia etc. It seems to be nutritional in origin and reacts pretty quickly to Ferric medication. It does not appear to be due to Ankylostomiasis. Examination of stools has failed to reveal a high incidence of this disease or heavy infections.

4.—*Ascariasis :* Heavy infection with round-worms is still quite common and has been responsible through Toxaemia and exhaustion for 6 deaths during the year. The deaths occurred only among children.

5.—*Dermatophiliasis :* Infection with chigger-flea is common. One case was so heavily infected that indoor hospital treatment was necessary. The disease is more frequent during the summer months and in a few cases is so troublesome that heavily infected huts are practically not habitable.

6.—*Hysteria :* This condition is surprisingly common in Rodrigues, the reverse of what one would expect in a relatively primitive people. The great majority of cases occur among women but I have seen cases in men and even in a girl ten years old. It appears to be equally frequent among the Negroid and Eurafrican types.

7.—*Influenza :* The commonest disease in Rodrigues is Influenza, to which the Rodriguean appears particularly susceptible. Any sudden change in climatic conditions is liable to cause a small epidemic. Pulmonary complications are frequent and Sinusitis quite common.

During the winter months Influenza levied a heavy toll among the newborn.

8.—*Meningitis :* Four cases of Meningitis were recorded, with three deaths. The infective agents were :—Tuberculosis, Pneumococcal Infection, Syphilis and one undetermined cause, possibly Influenza.

9.—*Mumps and Chicken-Pox :* There have been a few sporadic cases of these diseases but no epidemic. They occurred mostly in Port Mathurin and in a few hamlets up the hills.

10.—*Puerperal Sepsis :* There was one case of Puerperal Sepsis. The patient was treated in Hospital and recovered. The incidence of this disease is thus one case in 391 confinements, excluding abortions.

11.—*Rheumatic Carditis :* There was a clear case of this disease. The patient at first suffered from Febrile Polyarthritis with subsequent development of Mitral Stenosis followed by death a few months later.

12.—*Strangulated Hernia and Intestinal Obstruction :* There were three deaths due to Intestinal Obstruction(2) and Strangulated Hernia (1). The patients died before reaching Hospital. Three cases of Strangulated Hernia having been operated on, this makes a total of five cases of this condition—a pretty high incidence.

13.—*The sick and Destitute :* A word is necessary regarding patients who are too old to look after themselves, are suffering from a chronic incapacitating disease, and have no relatives to care for them. Outdoor relief is insufficient in these cases, and their only refuge is Port Mathurin Hospital where they stay for months, or until they die. This diminishes the already scanty accommodation at the hospital and creates a large breach in the vote for maintenance of patients. What to do with such cases is a problem the solution of which does not appear very clear.

14.—*Diseases not seen during the year :* The following diseases, quite common in Mauritius were not seen among Rodrigueans during the year:

Malaria	Inguinal Granuloma
Bacillary Dysentery	Typhoid Fever
Schistosomiasis	Tapeworm
Diphtheria	Erysipelas

Measles.

(Dr. Mangenie records three cases of measles during 1931).

Malaria.

Malaria occurred only among persons from Mauritius or India.

III.—LEPROSY, TUBERCULOSIS, AND VENEREAL DISEASE

1. Leprosy.

Below will be found a synopsis of the Leprosy situation in Rodrigues. Of the 22 known lepers, 13 are males and 9 females. Eleven cases are apparently cured or burnt out and of the remainder three are highly infective, one moderately so, and eight very slightly so. Nasal smears are positive in 4 only and the degree of infectivity stated in the table is merely an estimate on clinical grounds.

Sixteen lepers are now under treatment, including five of the apparently cured. All but one are progressing satisfactorily, although progress is slow in two cases. One case has become definitely worse during the last two months.

A total of 829 injections were done to lepers during the year.

Four new cases have come to light—one was detected while visiting contacts, and three came up voluntarily for examination. All were early cases.

The Leprosy Board met twice during the year and recommended the transfer to Mauritius of three female infective cases, who applied for such transfer. A fourth leper was transferred to Mauritius as he was apparently insane. He was found to be suffering from Cerebral Syphilis by the Superintendent of the Leper Hospital, and returned to Rodrigues a few months later, greatly improved.

The increase in the number of Lepers on that of last year is only apparent. I have included in this list a few patients who had been treated by Dr. Mangenie, and who showed signs of past or active leprosy.

A certain number of persons have also had " preventive " treatment. They are examined from time to time, but having so far showed no sign of the disease they are not included in the list.

The attitude of patients suffering from Leprosy in Rodrigues is eminently satisfactory. The great majority are keen on treatment, and regular in attendance. A good many people have voluntarily attended the Dispensary for the sole purpose of being examined for Leprosy. This unsual, but gratifying attitude of the population of Rodrigues makes the outlook for the future much more cheerful than it would be otherwise.

Table showing number, infectivity, and present conditions of Lepers in Rodrigues, will be found overleaf, page 111.

Table showing number, infectivity and present condition of Lepers in Rodrigues

No.	Initials	Age	Sex	Type	Grade	Infectivity	Nasal Smear	Treatment	Present condition
1.	F.R	25	M	Nodular	B.3	+ +	+ve	Yes	... Progressing slowly
2.	J.E	18	M	Nodular	B.2	+	+ve	Yes	... Progressing satisfactorily
3.	R.L	23	M	Nervous	A.1	O	.	No	... Burnt out
4.	B.M	18	M	Nervous	A.2	V. Slight	−ve	Yes	... Progressing satisfactorily
5.	S.A	30	M	Nodular	B.3	+ +	+ve	Yes	... Definitely worse during last 2 months
6.	M.C	35	F	Nodular	B.3	+ +	+ve	Yes	... Progressing slowly
7.	N.B	? 60	M	Nervous	A.1	O	.	No	... Burnt out
8.	E.R	? 40	F	Nodular	A.1	O	−ve	Yes	... Apparently cured
9.	C.P	? 30	F	Nervous	A.1	O	.	No	... Apparently cured
10.	O.E	49	M	Mixed	A.1	O	−ve	No	... Apparently cured
11.	T.P	16	F	Mixed	B.1	V. Slight	−ve	Yes	... Progressing satisfactorily
12.	L.P	30	F	Nervous	A.1	O	−ve	Yes	... Apparently cured
13.	L.L	54	M	Nervous	A.1	O	.	Yes	... Apparently burnt out
14.	L.L	29	F	Mixed	A.1	V. Slight	−ve	Yes	... Apparently cured
15.	A.R	49	M	Nervous	A.1	O	.	Yes	... Apparently cured
16.	D.R	40	M	Nervous	A.2	O	−ve	Yes	... Progressing satisfactorily
17.	M.M	? 45	M	Mixed	A.1	O	.	No	... Apparently cured
18.	E.A	24	F	Nervous	A.1	O	.	No	... Apparently cured
19.	F.L	30	M	Nervous	A.2	V. Slight	−ve	Yes	... Progressing satisfactorily
20.	J.L	12	M	Nervous	A.2	V. Slight	−ve	Yes	... Progressing satisfactorily
21.	O.P	20	F	Nervous	A.2	V. Slight	−ve	Yes	... Progressing satisfactorily
22.	L.L	13	F	Nervous	A.2	V. Slight	−ve	Yes	... Progressing satisfactorily

Numbers 4, 5, 20, 22, are the new cases detected during the year.

2. TUBERCULOSIS.

Tuberculosis is the commonest cause of death in the island, having accounted for 21 deaths during the year. Nineteen were due to Pulmonary Tuberculosis, one to Tuberculous Peritonitis, and one to Tuberculous Meningitis. It is the commonest cause of death among the adult population between 20 and 50, the proportion being nearly 50%. In the table in section V, the age incidence of deaths due to Pulmonary Tuberculosis is shown.

There have been two cases of spinal caries, and a few cases of Cervical Adenitis, but surgical Tuberculosis cannot be said to be very common.

3. SYPHILIS.

There has been a definite decline in the incidence of primary and secondary Syphilis during the latter months of the year. A dozen or so highly infective cases were energetically treated on receipt of the necessary drugs, and spread of infection was thus checked. What proportion of the population is infected it is difficult to say, but on clinical grounds it would appear that though there is quite a number of Syphilitics in Rodrigues, the condition is not common enough to constitute a serious menace. Patients submit very willingly to treatment, and react quickly to appropriate medication.

There were two deaths due to Syphilis : one from Aortic Regurgitation ond one from Stenosis of the Larynx.

4. GONORRHOEA.

This disease is common, but not exceedingly so. Complications are rare. There were only 84 attendances at the Dispensaries for the disease. This figure, however, does not include attendances for irrigation etc. Six cases, residing very far, were admitted to the hospital for treatment.

IV.—EXAMINATION OF SCHOOL CHILDREN

The three schools of the island have been inspected during the year. 559 children were examined. The results of this examination are shown below. The figures show that the incidence of Dental Caries is about the same in the three schools, that patholigical enlargement of the tonsils is least common at La Ferme, and that the number of verminous children, and of children suffering from Pyogenic infections of the skin is highest at Port Mathurin. It was noted that Dental Caries was most common among children below six to seven years of age, that is, during the first dentition.

Only one case of Leprosy was found (Port Mathurin). This case had already been detected at the Dispensary.

It was very gratifying to note the general cleanliness of the school children. The fact that few skin diseases were present, and that only 2.1% of the children were lice-infected, is a fairly good indication of the habits of the average Rodriguean, who is very intolerant of any skin or parasitic infection.

The last line in the table shows the number of children whose general condition and state of development justified the term " excellent." The percentage is approximately the same for all three schools, and the term has only been used in the case of children in splendid physical condition.

In the absence of other figures, it is impossible to comment on the state of health of Rodriguean children as compared to that of children in other countries in the same latitude, but there is no doubt that the Rodriguean would easily hold his own.

The school buildings and sanitary arrangements were in excellent state of repair.

TABLE SHOWING RESULTS OF EXAMINATION.

	Port Mathurin School	La Ferme School	Lataniers School	Total	Percentage
No. of children examined ...	180	174	205	559	—
Dental Caries	43	34	47	124	22.16
Diseased Tonsils	13	4	13	30	5.4
Verminous Children ...	11	—	1	12	2.1
Congenital Syphilis ...	1	2	1	4	0.7
Tuberculosis *	—	1	1	2	0.35
Leprosy	1	—	—	1	0.17
Pyogenic Skin Diseases ...	15	—	2	17	3.0
Classed " excellent " ...	124	119	135	378	67.6

V.—DEATH-RATE, CAUSES OF DEATH, INFANTILE MORTALITY

1. DEATH-RATE AND CAUSES OF DEATH.

There have been 103 † deaths during the year as compared to 116 last year. The death-rate was 12.7, a dimunition of 0.8 on that of 1932. In computing the death-rate, however, one must take into account that 770 healthy persons emigrated to Reunion during the second half of the year. Had they stayed in Rodrigues it is probable that the death-rate would have been lower.

The lowest mortality was in June (2) and the highest in July and September (14).

Below is a list showing the main causes of death. Pulmonary Tuberculosis is the commonest cause, the next common being Bronchitis, Broncho-pneumonia and Influenza. Respiratory diseases thus accounted for 39 deaths, i.e. nearly 38% of the total.

Acute Bronchitis	5
Acute Gastro-Enteritis	2
Ascariasis	6
Broncho-pneumonia	9
Burns	3
Influenza	6
Infantile Convulsions	2
Marasmus and Debility	13
Myocarditis	3
Meningitis	3
Malignant Disease	3
Old Age	1
Prematurity	2
Pulmonary Tuberculosis	19
Tuberculous Meningitis	1
Tuberculous Peritonitis	1
Syphilis	2
Strangulated Hernia and Intestinal Obstruction ...	3
Rheumatic Carditis	1
Tetanus	1
Other Causes	17
Total	103

* These children were suspected at the time of examination of being early cases of Pulmonary Tuberculosis, but no definite evidence of the disease has been obtained so far.

† The Deaths Register bears 104 declarations of death. One of these was that of a death having occurred on board a steamer bound for Rodrigues. The body was landed for burial.

Table showing age-incidence of Death :

	Six weeks or under	Under 1 yr., but over 6 weeks	1-2 yrs.	2-3 yrs.	3-5 yrs.	5-10 yrs.	10-20 yrs.	20-50 yrs.	Over 50
	20	15	10	8	6	5	3	23	13
Deaths due to Pulmonary Tuberculosis	0	0	0	1	0	2	1	11	4

2. INFANTILE MORTALITY.

Infantile mortality is high, 58 children having died before reaching the age of five. The table in the preceding paragraph shows that of these 20 died before reaching the age of 6 weeks and no less than 35 before the age of one year. The chief causes of death among the newborn have been Influenza, Prematurity, and Marasmus. The Rodriguean does not seem to realize when a very young baby is ill and a good many died before they could be attended to, the relatives stating that the child died after a few hours' illness.

Among the children aged one year or under, but over six weeks, Bronchitis and Broncho-pneumonia are the main causes of death. From one year up to five years heavy infection with round worms frequently complicates intercurrent diseases, and is doubtedly a contributory factor to, and in some cases a direct cause of, death.

Tuberculosis was responsible for one death, but it is probable that a certain number of cases classified under debility were tuberculous though no definite clinical or microscopic evidence was obtained.

Three children died of burns during the year : one was treated in Hospital, one was brought to Hospital in extremis and died an hour later, and one died of shock at home before treatment could be administered.

Below is a list of the main causes of death among children.

Acute Bronchitis	6
Broncho-pneumonia	7
Acute Gastro-Enteritis	2
Infantile Debility	13
Influenza	6
Ascariasis	6
Burns	3
Pulmonary Tuberculosis	1
Tuberculous Peritonitis	1
Meningitis	2
Other causes	11
Total	58

Births : There were 380 live-births during the year an increase of 23 over 1932.

There were 11 still-births as compared to 16 during the same period.

VI.—SANITARY CONDITIONS AND POSSIBLE IMPROVEMENTS

1. MEAT INSPECTION.

About 220 ox carcases, 70 sheep, and 35 pigs were examined during the year. All were found fit for human consumption and no case of Bovine Tuberculosis was found. A special lookout has been kept for infection of pigs by the Kidney-worm *Stephanurus Dentatus,* reported to be quite common in Rodrigues, but without success.

A meat stamp has been provided and is now in use.

The open air abattoir continues to function satisfactorily.

2. Parking of Cattle in Port Mathurin.

I wish to call your attention to the present practice of parking animals in Port Mathurin during " boat time." Hundreds of goats, sheep, and pigs are parked in the town one or two days before the arrival of the boat going to Mauritius. The animals are parked mostly on private grounds, but also in public places near the seashore at least for some hours. The streets are littered with chickens which have been brought up for sale. This causes considerable fouling of the town and from a sanitary point of view is unhealthy and can be dangerous. A cattle market, which need be little more than a pole fencing fitted with pens and paddocks, is desirable : animals should only be allowed to go through the town on their way to the jetty for shipment.

3. Privy Accommodation and Night Soil Service.

The privy accommodation in Port Mathurin continues to be poor. A good many houses have no privy at all and those that do exist are in many cases in a very bad state of repair. Notices have been served on the more obdurate defaulters, but as long as the present indifference and ignorance of the average Rodriguean regarding this aspect of sanitation exists it is necessary to be circumspect in enforcing the law.

The Night Soil Service has been mostly satisfactory.

4. Water-Supply Sanitation.

The water supplied to Port Mathurin from the three reservoirs is of fair quality when the supply is abundant, but during the dry season there is a distinct fall in purity. When there is a shortage, Cascade Pigeon reservoir, in spite of frequent cleaning contains much decaying vegetation and countless millions of mosquito larvae and other aquatic animalcules. Moreover, frequent cleaning means frequent stirring of the inevitable deposit at the bottom and thus is a not unmixed blessing.

Stagnation and decomposition of vegetable and animal detritus is less in the case of Camp du Roi and Solitude reservoirs, but I recommend, nevertheless, that water from all three reservoirs be filtered before distribution. The same applies to the water-supply of La Ferme.

I have referred elsewhere to an epidemic of Gastro-Enteritis which occured during January and February. This disease is not as a rule water-borne, but some cases at least may have been due to drinking impure water. I have advised the population to boil their drinking water but filtration is also necessary to get rid of the high percentage of organic matter.

VII.—GENERAL REMARKS AND CONCLUSION

1. Proposed Medical Station at Baie du Nord.

A glance at the Map of Rodrigues will show that while the North East and South West parts of the Island are well provided with medical assistance, the South West part, from Papayes westward, is quite devoid of any assistance. There is a large proportion of the population, probably one third of the total. living at La Ferme, Citron, Vengassail, the corals etc., who have to come a very long way for advice or treatment. The journey from La Ferme, for instance, overland to Port Mathurin, is long and arduous for a sick person to undertake, while the distance from places west of La Ferme is still greater. In the case of Lepers, the difficulty is even greater for, as a rule, they are refused passage in boats.

For these reasons I think that a Medical Station should be created at Baie du Nord, where patients could attend once a week, and which would be of easy access to persons living along the coastline, as well as to those from the interior. The expenditure involved should not be considerable ; two small rooms and verandah being all that is required. The G.M.O. could proceed to Baie du Nord once a week by boat accompanied by a Dispenser, and taking with him a case of stock mixtures, and all necessaries for minor operations, and Leprosy or V.D. treatment. The case would then be returned to Port Mathurin Hospital. No attendant would be necessary at the Station as no drugs etc., would be kept there.

I am of opinion that such a scheme would be very beneficial to the inhabitants of these distant regions and would largely contribute to their medical welfare.

2. Conclusions.

The Health conditions in Rodrigues are satisfactory. The mortality is low, and compares very favourably with that in other parts of the world. Infantile mortality is high and might be lower, but given local conditions and the ignorance of the population in child hygiene, might equally well be higher.

January 31st, 1934.

E. H. MADGE,
Government Medical Officer, Rodrigues.